

CHIEF EXECUTIVE APPROVAL 04/2017
Plumbing and Drainage Act 2002, part 5.



Approval

1. The **Nature Clear GWS10** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **Ecoflo Wastewater Management Pty Ltd** ("the manufacturer") (ABN 33 606 583 895) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 15 January 2013.
2. Approval is granted for a greywater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Act 2002*, part 5 and the conditions of approval detailed below.
3. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.
4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

Conditions of approval

5. The manufacture, installation, operation, service and maintenance of the systems must be in conformity with the conditions of this Chief Executive Approval.
6. The treated effluent must not be discharged to a spray irrigation system.
7. The greywater treatment system may only be used on premises that generate per day:
 - (a) a maximum hydraulic loading of 2700L; and
 - (b) a maximum organic loading of 800g BOD₅
8. For the system to meet the requirements of a greywater treatment system, the system must produce the following effluent quality —
 - (a) Biochemical Oxygen Demand – less than or equal to 240mg/L; and
 - (b) Suspended Solids – less than or equal to 180mg/L
9. Each system must be serviced at three (3) monthly intervals in accordance with the manufacturers details supplied in the owner's service and maintenance manuals.
10. Each system must be supplied with —
 - (a) a copy of this Chief Executive Approval document;
 - (b) details of the system and ancillary equipment;
 - (c) instructions for authorised persons for its installation;
 - (d) a copy of the owner's manual to be given to the owner at the time of installation; and
 - (e) detailed instructions for authorised service personnel for its operation and maintenance.

Chief Executive Approval	
Approval No:	04/2017
Date of Issue:	18/5/17
Delegate Signature:	
Building Codes Queensland	

11. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.
12. At each anniversary of the Chief Executive Approval date, the manufacturer must submit to the Chief Executive a list of all systems installed in Queensland that they have received an installation and commissioning certificate for during the previous 12 months.
13. Where the Chief Executive is notified of any system failures that they believe are a result of poor design or faulty manufacture, the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the National Association of Testing Agencies (NATA) accredited laboratory nominated by the manufacturer, which systems are to be audited for Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The sampling and testing of the selected systems, if required, is to be done at the manufacturer's expense. The following results must be reported to the Chief Executive;
 - (a) Address of premises.
 - (b) Date inspected and sampled.
 - (c) Sample identification number.
 - (d) Biochemical Oxygen Demand (BOD₅).
 - (e) Total Suspended Solids (TSS).
14. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails — to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
15. This approval may only be assigned with the prior written consent of the Chief Executive.
16. This approval expires on 17 May 2022 unless cancelled earlier in accordance with paragraph 14 above.



Lindsay Walker
Director
Strategic Policy (Plumbing, Drainage, Committees and Special Projects)

Date approved: 18 May 2017

Level 16,
41 George Street Brisbane
GPO Box 2457, Brisbane Qld 4001
Telephone +61 7 300 82552
Facsimile +61 7 323 71248
Website www.hpw.qld.gov.au

ABN 61 331 950 314

CHIEF EXECUTIVE APPROVAL No. 04/2017
Plumbing and Drainage Act 2002, part 5, division 1, section 93

SCHEDULE

Attachment 1

Specifications for the

Nature Clear GWS10

Department of Housing and Public Works	
Chief Executive Approval	
Approval No:	04/2017
Date of Issue:	18/5/17
Delegate Signature:	
Building Codes Queensland	

Specifications

What the package includes:

1. 450 Litre Filter tank
2. 100 mm OWV inlet pipe
3. 1 large piece of Fine Geotextile (Black or Beige)
4. 1 small piece of fine Geotextile (Black or Beige)
5. 1 small piece of course Geotextile (Black or Beige)
6. 3 x sample bags of gravel & sand

You will require

1. 100 kg of gravel nominal size 12-25 mm
2. 120 Kg of fine sand of nominal size 0.4-1.2mm
3. 320Kg of course sand of nominal size 1.5- 3 mm
4. 210 Litres of fine bark

Department of Housing and Public Works	
Chief Executive Approval	
Approval No:	<u>04/2017</u>
Date of Issue:	<u>18/5/17</u>
Delegate Signature:	<u>[Signature]</u>
Building Codes Queensland	

NATURE-CLEAR GWS10 2.0 GREYWATER TREATMENT SYSTEM

The system provides a simple and low cost effective means of treating greywater. Not only is the equipment low cost, but also, on a suitable site, the only significant excavation work required to install the system will be the trenching. The ongoing costs of the GWS10 will be similar to those of a standard septic system.

In order for the filtration tank to work effectively it is necessary to remove food scraps and grease from the kitchen waste water (see page 7 for further details). For this purpose, we supply a 300L grease trap. As an alternative we can supply smaller grease traps which need more frequent emptying.

The filtration tank, which is less than 1 cubic metre in size, consists of a pine bark coarse filter on top of a fine sand filter.

The coarse filter removes:

- large particles not caught in the grease trap; and
- lint from the washing machine.

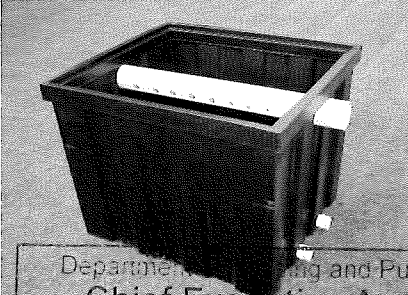
The sand filter:

- traps still finer particles
- polishes the water; and
- reduces the organic content of the water.

The pine bark is separated from the sand by filtration material. The filtered material and bark will compost over time but should be removed and replaced with fresh bark as per the instructions in the maintenance section of this manual. If your distribution area is downhill from the filtration tank your geotech engineer will be able to design a distribution system without the use of a pump. If this is not the case, you will need a pump well. If required, we recommended that the well and pump are purchased locally from your plumbing store. General instructions on how to install a pump are provided in this manual.

The water that exits in the filtration tank is classified as having undergone "Primary Treatment" and must be distributed into trenches as specified by your engineer. Make sure their size calculation does not include an allowance for toilet water, which would make the trenches unnecessarily large and expensive

GWS10 Filtration Tank



Department of Building and Public Works
Chief Executive Approval
Approval No: <u>04/2017</u>
Date of Issue: <u>18/5/17</u>
Delegate Signature: <u>[Signature]</u>
Building Codes Queensland

GWS10

FILTRATION TANK INSTALLATION

The filtration tank should be at least partially dug (at least 500mm deep) into the ground. The tank should be laid on a bed of sand with a 1-2% incline towards the outlet pipes.

The tank is first filled with 5 - 6 x 20kg bags of gravel (River sands Resources #3 gravel or similar with a nominal size of 12-25 mm). The gravel must be no smaller than this. The layer should be at least 80mm thick and cover the outlet pipe. Rake the gravel flat. Be careful not to damage the outlet pipes as the gravel is added.

Lay the larger fine black or beige coloured filter cloth material on top of the gravel such that the 100mm slots in the material are located above the 100mm inlet pipe. The material should hang over the sides (see page over).

Carefully add 120kg of fine grade washed sand (Riversands 7C sand or similar with a nominal size of 0.4-1.2mm). The fine sand layer should be about 100 mm thick. Rake the sand flat. Then add 320 kg of coarse washed sand (Riversands #6 sand or similar with nominal size of 1.5-3.0 mm). Rake flat.

Note:

We strongly recommend that the sand is washed before putting it into the tank by placing it on the filtration material and allowing water to flow thru to remove the fines from the sand. If the sand is not washed until the fines have been removed they will end up further down the system with the possibility of causing expensive blockages.

The smaller, fine black or beige coloured filtration material is then positioned to lie flat on top of the sand and then add half of the medium coarse pine bark 160 litres. The top of the shade cloth is designed to extend beyond the top of the tank for ease of removal when the material needs to be cleaned. The 'U' shaped slots in the top of the shade cloth are for fitting around the inlet pipe. Lay the coarse green coloured filtration material on top of half of the bark just below the inlet pipe and fill the tank with the rest of the bark.

Connect the outflow from the grease trap (if kitchen water is being diverted into your Nature-Clear) and other waste water sources to the inlet pipe of the tank ensuring that the inlet pipe is sealed where it enters the tank. Also seal the opposite end of the inlet pipe where it exits the tank. The screw cap end should be on the same end of the tank as the Outlets at the base of the tank.


If the application area is to be gravity fed the 2 outlet pipes from the filtration tank will now need to be connected to the pipe work of the application area.

Contact Ecoflo for replacement material.
Ph.: 07 3889 6144 or 1300 138 182 Email: info@ecoflo.com.au

Department of Housing and Public Works
Chief Executive Approval

Approval No: 04/2017

Date of Issue: 18/5/17

Delegate Signature: 
Building Codes Queensland

NATURE-CLEAR GWS10 FILTRATION TANK SPECIFICATIONS

FILTRATION TANK:

- Material; Medium density grade polyethylene
- Properties; U. V stabilised - High stress resistance
- Thickness; Average 5 mm
- Construction;
 - Rotational moulding
 - All surfaces are continuous with no welded or joined seams
 - Ribbed structure for additional strength
- Dimensions;
 - Height: 780 mm
 - Length: 940-1025 mm
 - Width: 820-910 mm

Department of Housing and Public Works	
Chief Executive Approval	
Approval No:	<u>04/2017</u>
Date of Issue:	<u>18/5/17</u>
Delegate Signature:	<u>[Signature]</u>
Building Codes Queensland	

CHIEF EXECUTIVE APPROVAL No. 04/2017
Plumbing and Drainage Act 2002, part 5, division 1, section 93

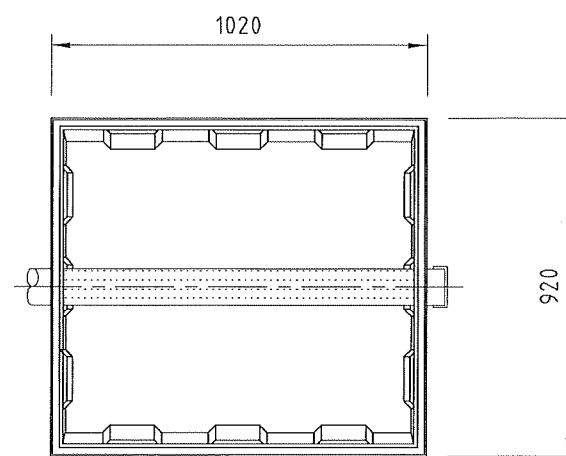
SCHEDULE

Attachment 2

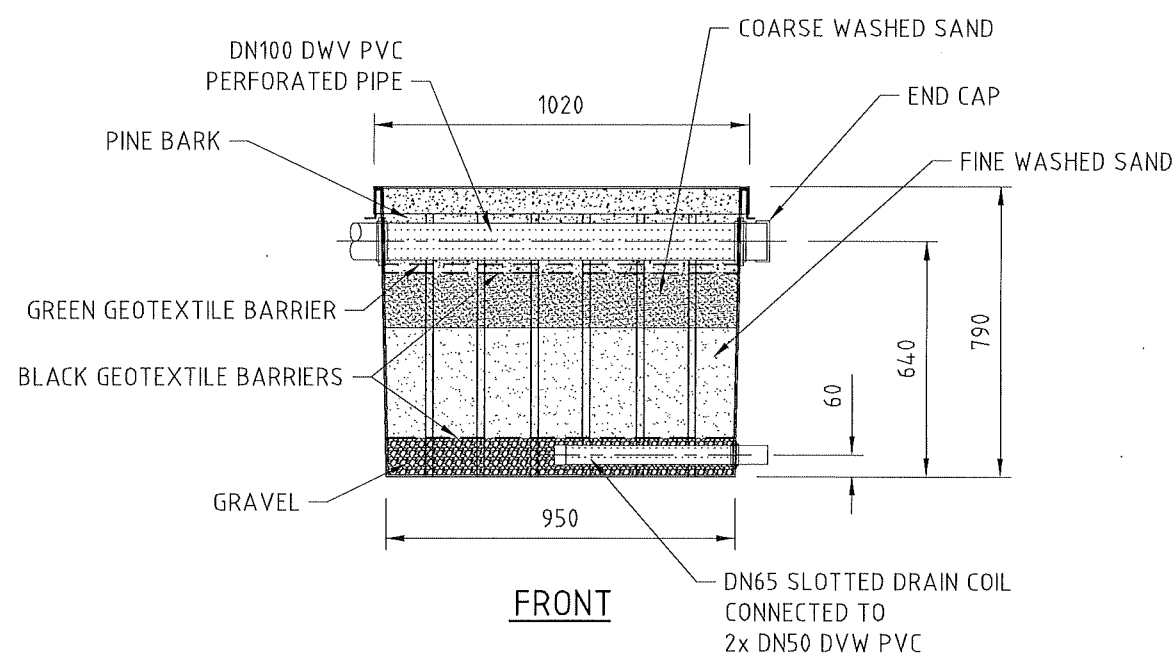
Drawings for the

Nature Clear GWS10

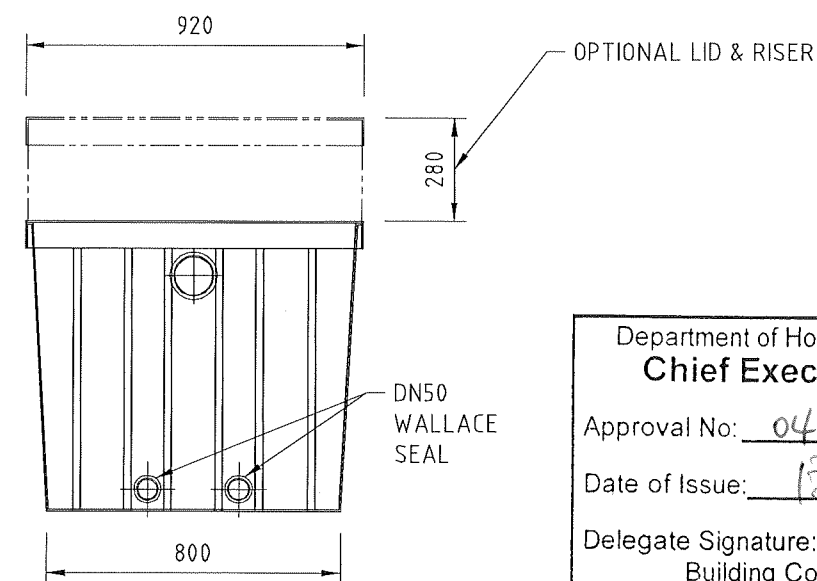
Department of Housing and Public Works	
Chief Executive Approval	
Approval No:	04/2017
Date of Issue:	18/5/17
Delegate Signature:	
Building Codes Queensland	



TOP



FRONT



SIDE


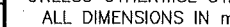
NOTES:

1. MANUFACTURING TOLERANCE $\pm 2\%$.
2. ALL MATERIAL LDPE EXCEPT PVC PIPING AND S/S FASTENERS.
3. TANK CONTENT: <NOT SUPPLIED>
 - 3.1. 100kg GRAVEL OF NOMINAL SIZE 12-25mm.
 - 3.2. 100kg FINE SAND OF NOMINAL SIZE 0.4-1.2mm.
 - 3.3. 300kg SAND OF NOMINAL SIZE 1.5-3.0mm.

Department of Housing and Public Works
Chief Executive Approval

Approval No: 04/2017
Date of Issue: 12/15/17
Delegate Signature: [Signature]
Building Codes Queensland

PRELIMINARY
NOT FOR CONSTRUCTION

					UNLESS OTHERWISE STATED ALL DIMENSIONS IN mm	 <div>PH 1300 138 182 www.ecoflo.net.au ABN 33 606 583 895</div>	CLIENT : ECOFLO WASTEWATER MANAGEMENT			A3		
					 THIRD ANGLE PROJECTION		JOB TITLE : NATURE CLEAR GWS10			SHEET 1 OF 1		
							DWG TITLE : GREY WATER PREFILTER 450 L ARRANGEMENT AND DETAILS					
C	REVISED DRAIN PIPE	PV	28.4.16	HN			DRAWN BY: HN	DESIGNED:	APPROVED:	SCALE: 1:20	JOB No: —	DWG No: ECO-301-G-01
B	ADDED NOTES AND OPTIONAL RISER	PV	26.4.16	HN	DRAFTING STANDARD AS 1100	DATE : 14.3.16	DATE : —	DATE : —	CAD FILE NAME: — SUB DIR — DIR — DATE — BY: —			
A	PRELIMINARY ISSUE		14.3.16	HN								
REV	DESCRIPTION	CHKD	DATE	BY								

A3

SHEET
1
OF
1

REV
C