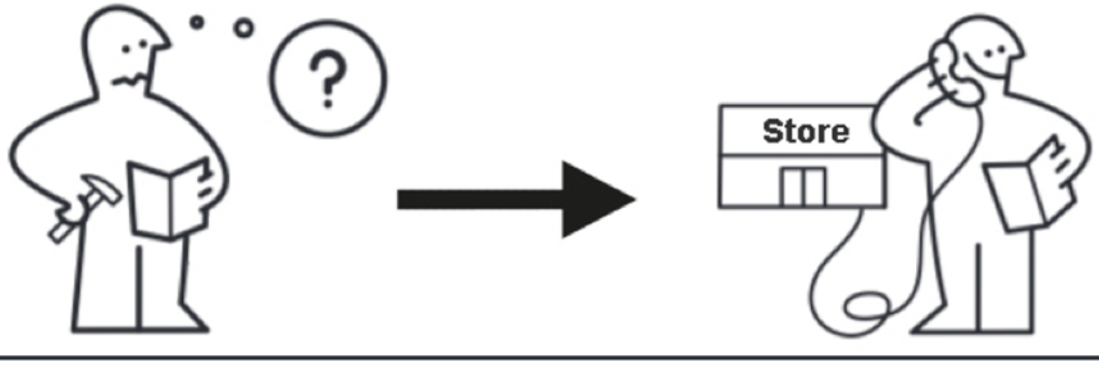
Installation Manual

Mini

Installation & Maintenance Manual

- Thank you for purchasing the Mini. Please read this manual carefully before installation.
- “Nature Loo” is a brand of Ecoflo Wastewater Management Pty Ltd.
- Visit our website at ecoflo.com.au

Please call your local distributor or Ecoflo Wastewater Management for support if required.



Ecoflo Wastewater Management Pty Ltd

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Proudly Designed and Assembled in Australia
by Ecoflo Wastewater Management

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WHAT'S IN THE BOX?

Please check the <u>packing slip</u> to ensure everything has been delivered.

If anything is missing, please notify your supplier *immediately*.

<u>Items you will need to complete your installation</u>:

◊ **100mm (DWV) PVC Pipe (ventilation):**

Enough length/meters to rise 600mm above the roof line.
N.B. *This height is very important for venting.*

◊ **2 x 100mm (DWV) PVC 45 degree bends**

The bends divert the vent pipe around the roof gutter/awning.

Or 1x 100mm roof dektite

Allows a water proof seal if the vent goes through the roof.

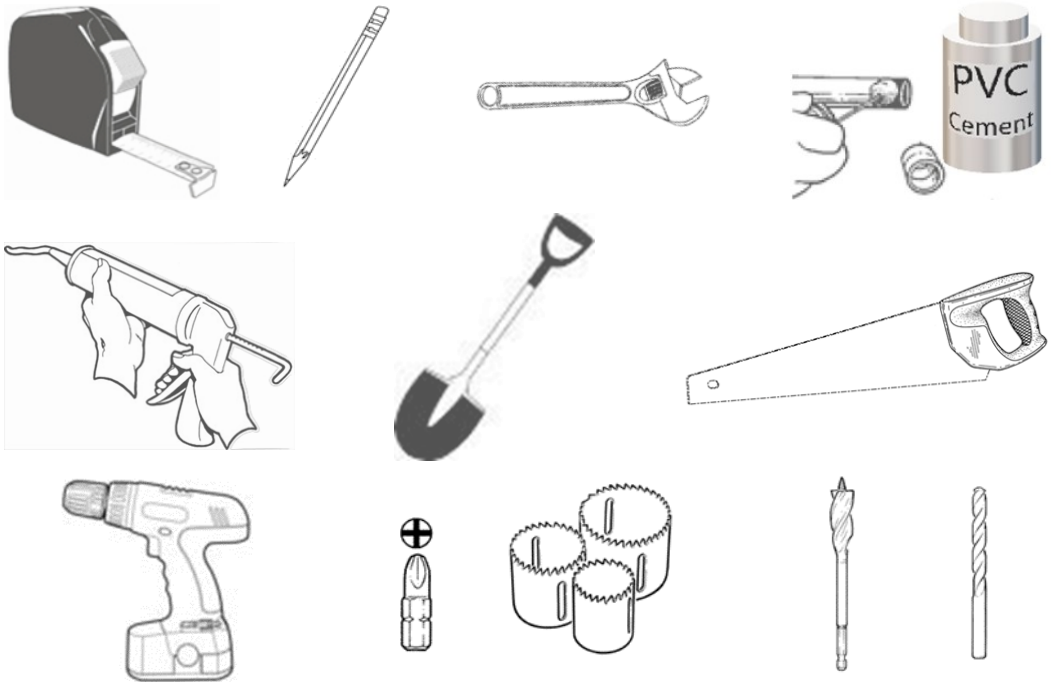
◊ **Brackets/pipe clips to hold the vent pipe to the outside wall:**
2 or 3 depending on the height to the length of pipe

◊ **100mm slotted agricultural or drilled PVC pipe:** 2m

◊ **Additional 19mm polypipe (liquid drain hose):** Enough meters to reach the absorption trench

◊ **Aggregate/Gravel (~25mm grade):** 0.3m^3

◊ **Hessian or plastic geotextile material:** 2m x 0.4m

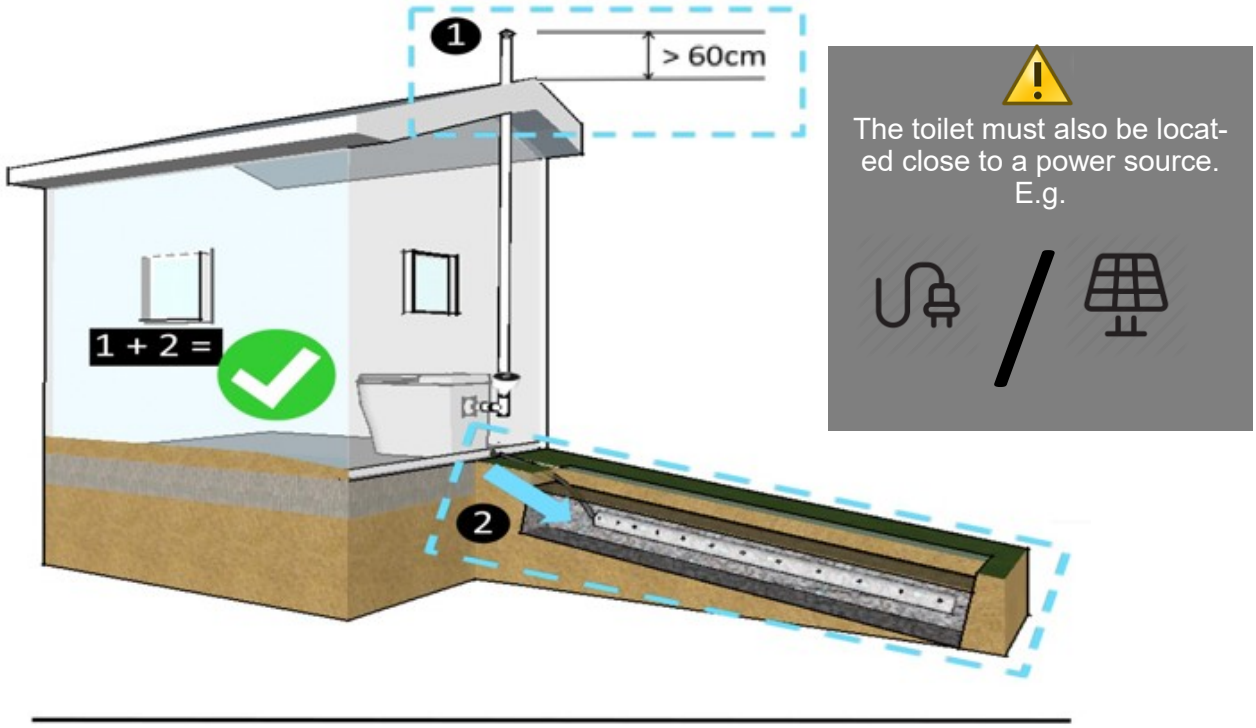


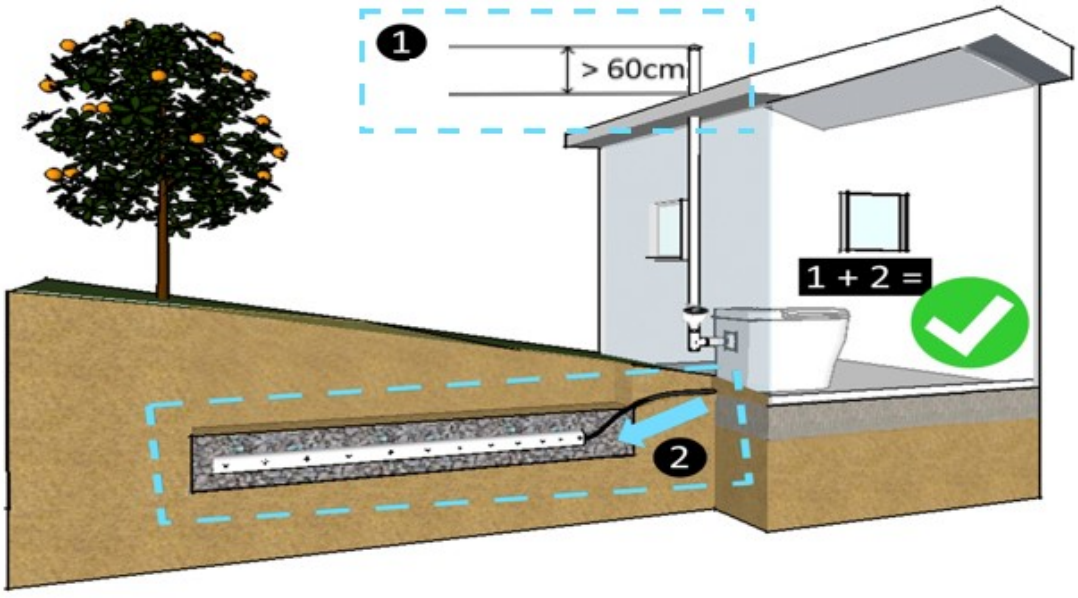
INSTALLATION

Step 1: Choose a suitable site to install the toilet

The location of the toilet must have both:

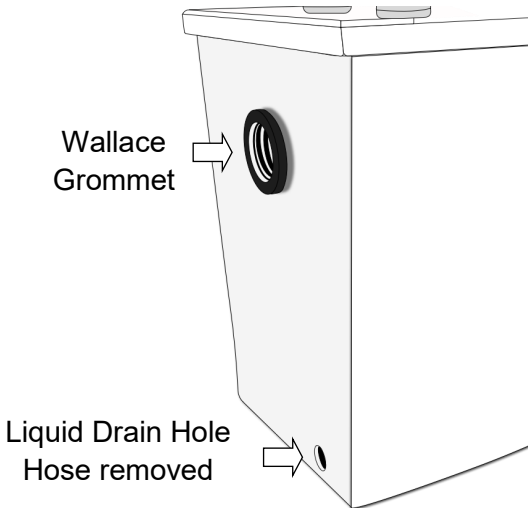
1. Easy access to connect the fan system to a permanent vent pipe up the outside of the structure. The vent pipe from the toilet exits horizontally through the wall behind the toilet.
2. An elevated starting point for liquid to flow by gravity from the toilet down into a liquid absorption trench which is to be dug outside the toilet room.

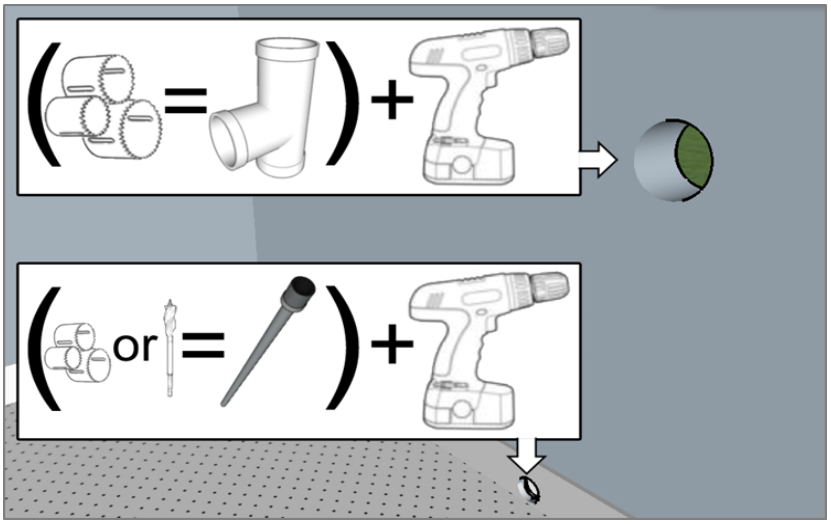




Step 2: Installing the vent pipe & liquid drain

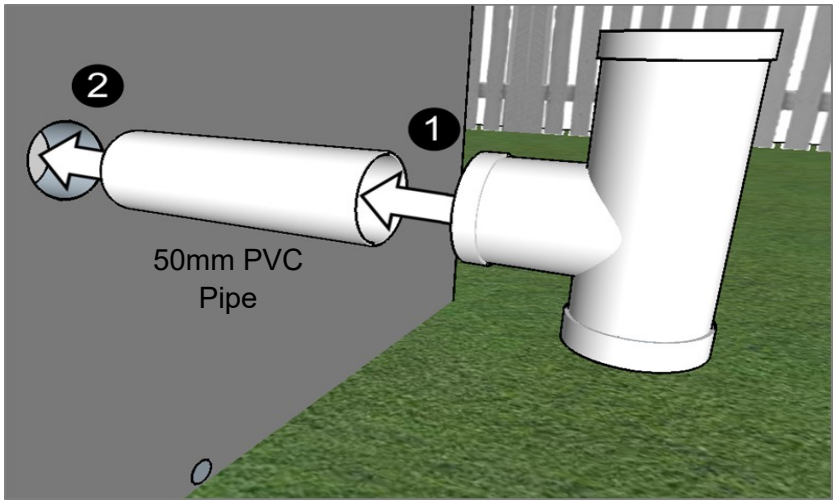
After selecting the toilet's location, fit the Wallace Grommet to the back of the fibreglass shell. Push the shell flush against the wall (in the correct position & alignment). Mark a circle on the wall through the Wallace Grommet & Liquid Drain Hole as a guide. Move the Shell away from the wall.



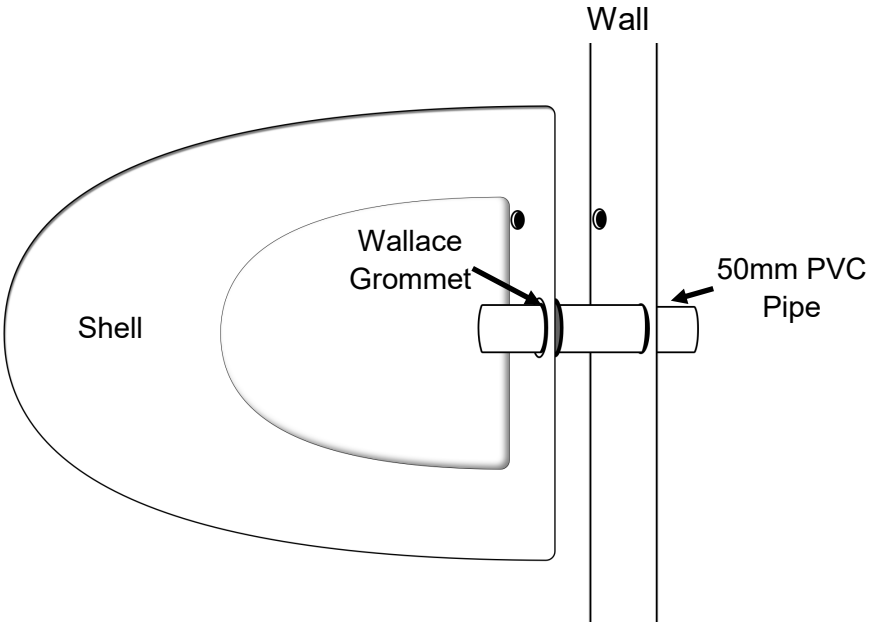


Prepare to drill suitable holes to accommodate the 19mm liquid drain hose and the 50mm PVC Pipe. Use these pipes to accurately mark the diameters on the wall.

Using the circles drawn on the wall as a guide, cut a hole of sufficient size to allow the 50mm pipe to push through the wall and a second hole (approximately 25mm) for the liquid drain hose.

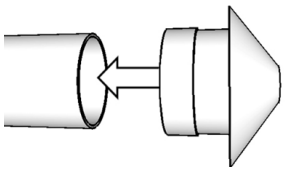


Push the 50mm PVC pipe length provided into the 'T' piece and then insert the 50mm PVC pipe through the wall until the 'T' piece is flat against the wall.



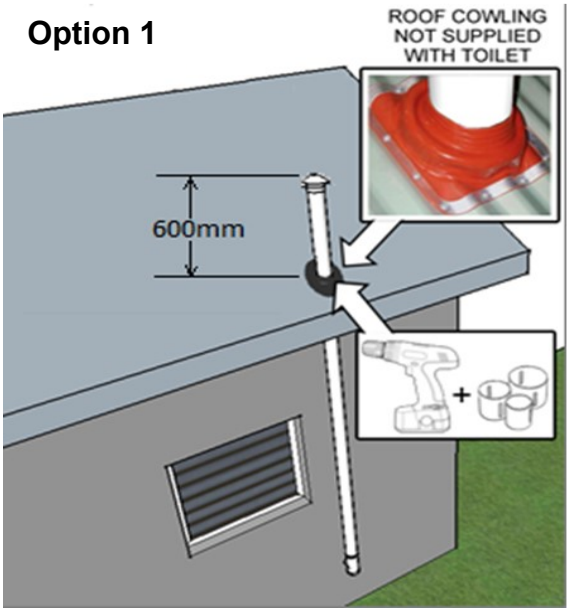
Insert the 50mm PVC pipe from the wall into the Shell through the Wallace Grommet and push Shell to its chosen position. If the PVC pipe protrudes too far into the shell [fouling the 20L bin], mark & trim the pipe to allow free air movement.

PVC pipe components, except the push on cap at the base of the 'T' piece (i.e. the Moisture Trap), should be glued together using Plumbers PVC glue.

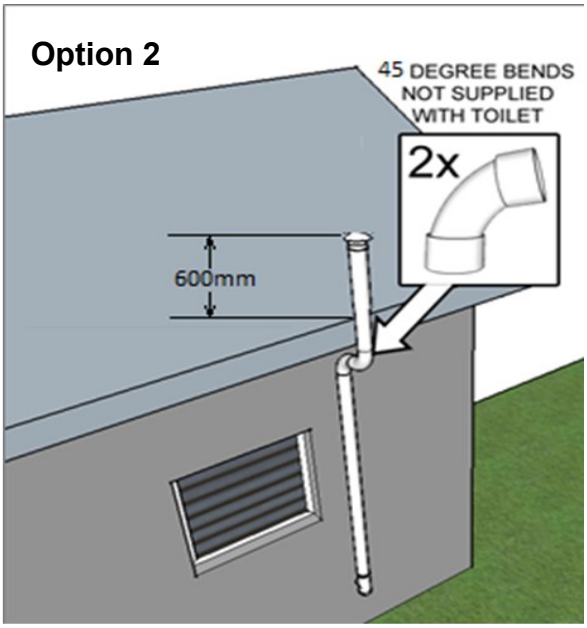


Connect the supplied Sewer Vent Cap to the top of the vent pipe, and then the bottom of the vent pipe into the moisture trap.

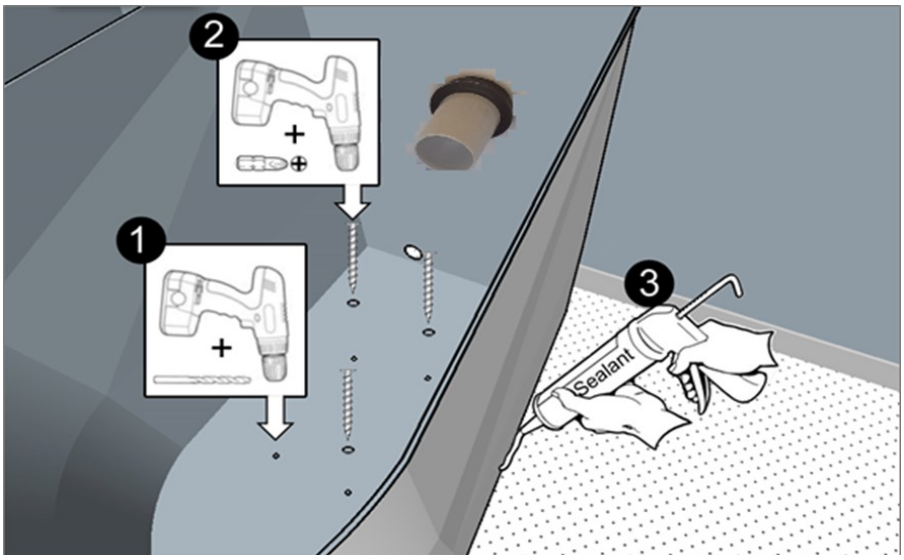
Option 1



Option 2



Install the 100mm PVC pipe as per Option 1 or Option 2 (pictured above). If possible, Option 1 is far better for ventilation as the two 45 degree elbows in Option 2 can slow the air flow. Use pipe clips (not provided) to secure the 100mm pipe to the outside wall.



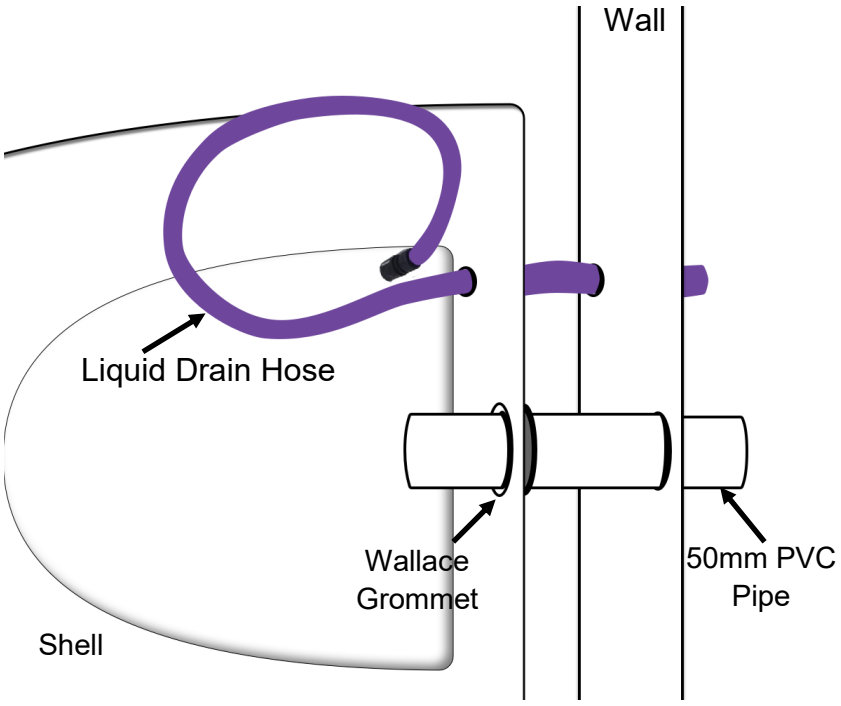
Once the toilet is permanently connected to the 'T' piece you may attach the fibreglass toilet shell to the floor with the self-tapping screws and nylon washers (supplied) and / or a sealant (not supplied).

Pre-Drill Clearance Holes in the Shell floor; so the screws do not stress the fibreglass shell.

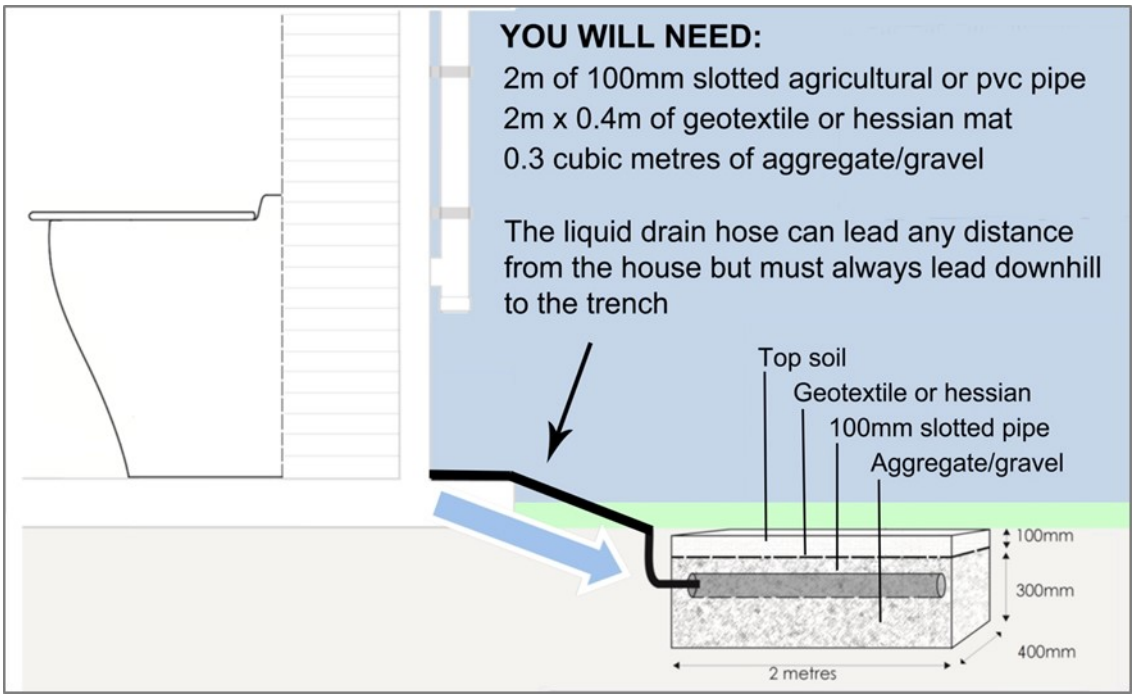
Step 3: Constructing the liquid drain trench

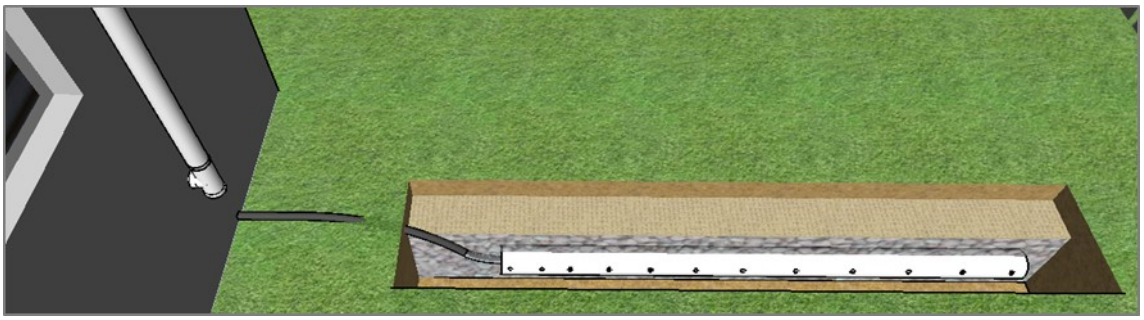
Place the plain end of the 19mm Liquid Drain Hose through the small hole in the rear of the fibre-glass toilet shell. Feed the hose through until the liquid drain valve connection side is resting just on the inside of the shell near the front edge.

The hose exiting through the hole in the shell should lead through the hole previously cut into the bathroom wall and out towards the absorption trench.



Construct the excess liquid drain absorption trench as per the following diagrams.



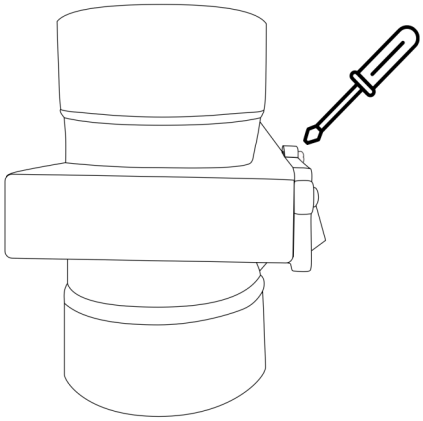


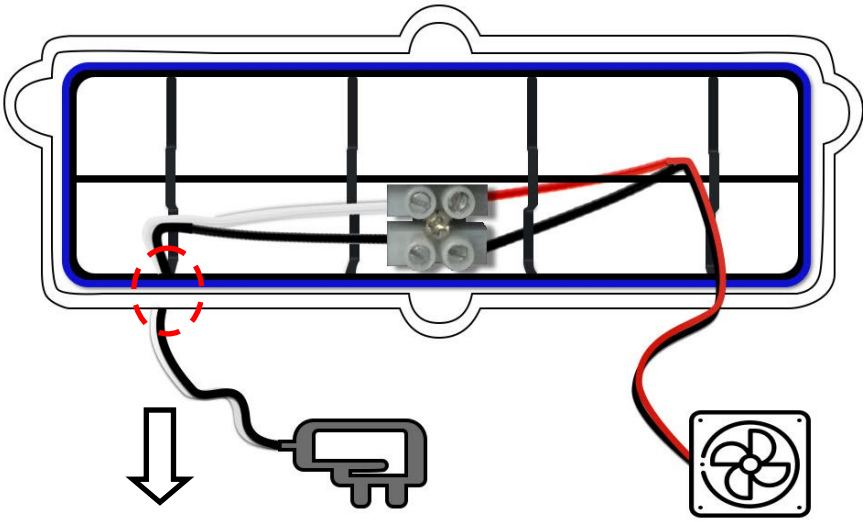
Also note that the liquid drain hose when installed must always allow the liquid to continuously run downhill.

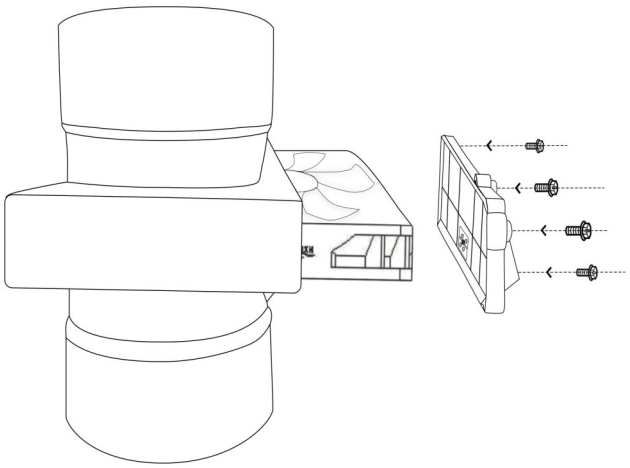
Step 4: Powering the fan

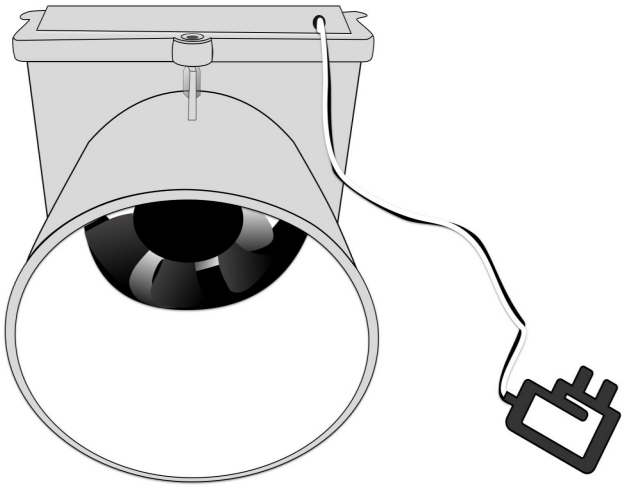
Mains Power

A 240/12 volt regulated transformer is included to run the fan from mains power. Connect the fans to the transformer as follows:









We recommend a spare fan is kept on hand at all times, particularly after a year of use.
Go to Ecoflo Online Store or call 1300 138 182 for replacement or spare fans.

Solar Power – refer to Solar Panel Installation Manual

Step 5: Assembling the collection chamber

1. Place the 'Bio Bag' into the 20Ltr bin supplied (no lid) & place in the space provided within the Shell under the Lid's waste chute.
2. Gently lift the Fibreglass Lid from the front & connect the liquid drain hose using the quick click connection supplied, directly to the base of the urine diverter at the front of the lid. You should hear a faint click when they are properly connected .

If you have completed Steps 1-5 you are now ready to use your toilet!

Follow these instructions each time you change the Bio Bag.

CARE & MAINTENANCE

Urine Diversion Bowl: After using the toilet you should spray Nature Flush Enzymes five times into the bowl to keep the liquid drain clear of crystallisation and odour.

Foreign Objects: The system should not be used for the disposal of sanitary napkins or disposable diapers.

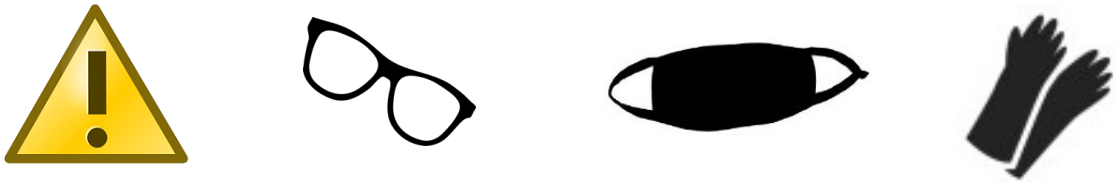
Cleaning the Shell and Seat: Just like any other toilet system, you will need to clean it occasionally. To do so, use the Nature Flush enzymes as per the instructions on the bottle with toilet paper. Soiled toilet paper can simply be dropped into the toilet.

Fan: Every month or every time you restart the system, check that the fan is turning freely and clean the hole at the bottom of the moisture trap.

EXCHANGING THE BIO BAG

The Bio Bag will need to be changed on a regular basis. The rate of filling will depend on the number of users. When the bag becomes approximately 70% full, you will need to replace it with a new Bio Bag by following these instructions.

Please ensure you wear protective glasses, face mask & gloves.



1. Identify an area that is suitable to empty the compost into a hole (***not within 100m of a potable water supply)*** on your property. Cover the top of the compost pile with at least 100mm of soil or mulch. Alternatively, check with your local government if would allow you to mix the toilet compost with your general garden compost.
2. Carefully lift the lid slightly, and then carefully disconnect the urine diversion by unclicking the connection (same as a garden hose) Cover the surface with 3-5cm of Wood Shavings. Now twist the Bio Bag closed, remove the bin and Bio Bag as one. This will help if the Bio Bag has already begun to break down. Bury the Bio Bag into the previously selected area and cover.
3. Rinse bin if required, place a new Bio Bag in to the bin. To reduce the chance of soiling the bin, (in case the Bio Bag breaks down prematurely), cover the floor of the bin with some pine wood shavings or even use a conventional bin liner.

Now redo Step 5, Assembling the compost bin. And then you're ready to go again.

COMPOSTING ACCELERATORS

Whilst Nature Loo users report successful composting without the use of any additives, we strongly recommend the use of the following in order to optimise composting, particularly when the toilet is in permanent use by more than two people.

Bulking Agent

Should be added on a regular basis, preferably a handful after each solid use. Alternatively, if this is not possible add the equivalent of this on a daily or weekly basis. The bulking agent can be added through the pedestal.

Refer to our website for suitable bulking agents.

We Do Not recommend the use of :

- ***sawdust as it creates an anaerobic condition within the chamber.***
- ***Cypress, cedar or eucalypt wood shavings due to their antimicrobial properties.***

Nature Flush Enzymes

A 125ml bottle of enzyme concentrate is supplied with the toilet. Please refer to the label for instructions and spray into the waste chute. A trigger bottle is provided. Any staining of the pedestal can also be removed with the spray.

Nature Quick Microbes

Should be used each time a chamber is changed to kick start the

Shop Online

TROUBLE SHOOTING

Please read this section before using your toilet.

Find more Trouble Shooting and FAQ information online at ecoflo.com.au/FAQ, or call us on 1300 138 182.

Nature Loo toilets have proven themselves to be one of the easiest systems to manage. However, being a natural process, reliant on a number of factors beyond our control, it can occasionally need some help to maintain an appropriate balance.

⚠ *The power has failed resulting in toilet room odours:*

Carefully follow the directions on how to empty your unit. Check your fan is working correctly, you still have power to the premises. . A replacement fan or Bio Bags can be purchased online.

⚠ *Vinegar Flies are present:*

Sometimes vinegar flies are attracted into the chamber and can breed. Should this problem occur in your system refer to our information on 'How to deal with vinegar flies' on our website.

It is best however to not let them in……

But if you have flies, simply empty the Bio Bag and give the bin a quick wash and start again.

Please note that broken fans should be replaced immediately in order to avoid flies entering the system. **It is recommended that you keep a spare fan on hand at all times.**

⚠ *There is an unpleasant odour in the toilet room:*

This is normally the result of a failed fan.

- ⇒ Check your fan is working correctly.
- ⇒ Check the bin is empty and clean.

Also check the drain hose is working correctly (poor a cup of warm water into the urine diversion bowl). If necessary replace the drain hose or clean out the pipe leading to the absorption trench by flushing with your water hose.

PRODUCT & COMPONENT WARRANTY

Ecoflo will furnish new parts to a customer whose toilet fails within the allotted warranty period for the particular component, provided that our inspection shows such failure is due to defective material or workmanship. Any part supplied is warranted for the balance of the original warranty period. The warranty period for a part begins from the date the original product was dispatched (plus 10 working days for transportation).

Warranty Period:

Any electrical component including solar	1 year
Any plastic bin	1 year
Any fibreglass/polymarble component	3 years
Toilet seats	1 year
Any other component	1 year

This warranty does not cover:

- Damage resulting from neglect, abuse, accident or alteration; or damage caused by fire, flood, acts of god or other causality.
- Damage resulting from failure of the purchaser to follow normal installation and operating procedures outlined in the manual or in any other printed instructions supplied with the system.
- Labour and service charges incurred in the removal and replacement of any parts found defective under this warranty.

Items subject to a dispute, where photographic evidence is inconclusive, must be sent prepaid to Ecoflo. The cost will be reimbursed by Ecoflo should the claim be found valid.

In addition to the above, Ecoflo will only replace a fan that fails during the warranty period under the following conditions:

- The fan has only ever been connected and powered by either a 12 volt transformer plugged into mains power or a solar system supplied by Ecoflo. Connecting your fan directly to a power source other than one supplied or specified by Ecoflo may result in damage to the fan and void the warranty.
- The fan and transformer must not be modified/altered in any way.

APPENDIX 1

INSTALLING EVERTRENCH LINERS FOR SULLAGE - WASTE WATER DISPOSAL

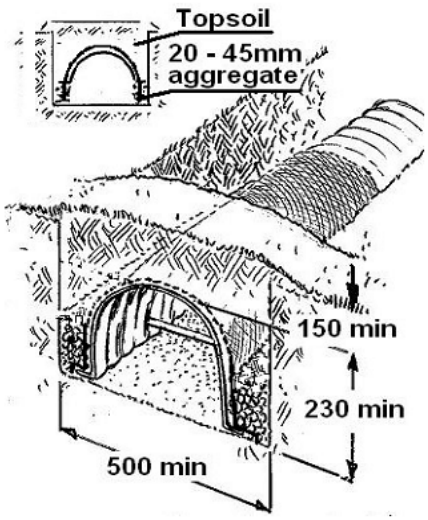
AS/NZS 1547:2012 provides basic information for the design and construction of many on-site waste-water disposal systems. This manual also includes information offered by EVERHARD, which has found to be of value. EVERTRENCH injection moulded polypropylene Arched Liners is used for "Conventional" evapotranspiration-seepage (ETS) and evapotranspiration-adsorption (ETA) layouts described in the standard.

All waste-water poses a health hazard. All layouts for Wastewater disposal land application areas must be designed by competent and authorised persons, taking the following factors into account:

- The Volume of wastewater, based on household size and appliances.
- The rate of absorption of the surrounding soil.
- Limits imposed by site conditions, such as slope, contours, prevailing wind and permanent shade etc..

Before beginning design and construction of wastewater disposal system, check State and local authorities for requirements for your area. Conventional trenches and beds may not be permitted.
Plants should be selected from approved lists for disposal areas, to minimise root intrusion problems.

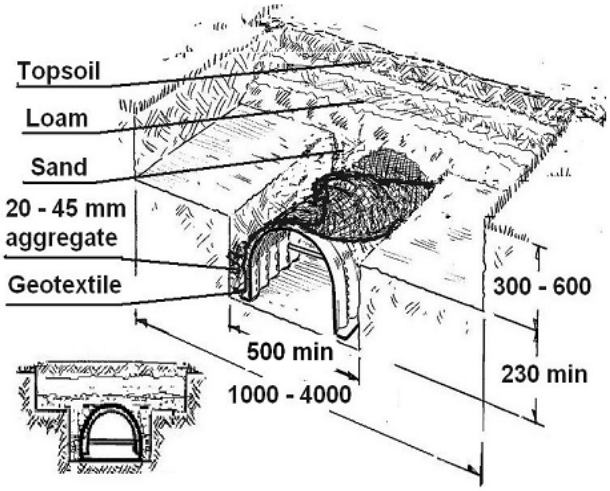
Method 1: Trenches: These are generally used in sites where soil is permeable enough to allow projected amounts of wastewater to drain freely into the trench floor. Trench should be wide enough for the EVERTRENCH Liner and deep enough for the selected Liner to be not less than 150mm below the surface.



1. Excavate the trench along a level site contour, with the floor not less than 50mm deeper than the invert of the pipe from the Septic Tank or sullage distributor, with at least 150mm cover over the top of the Liner.
2. The trench floor should be level, evenly raked, and have no low spots which would allow “ponding”.
3. Allow at least 75mm overlap for each length of EVERTRENCH Liner.
4. Fit Three Brace Bars into each Standard EVERTRENCH Liner, the first 220mm from the inlet end, then equally spaced along the excavation.
5. Cut the pipe entry hole in one Trench Liner End Cap, and fit the Caps to the Liner. Connect piping from the Septic Tank or Sullage Distributor.
6. Lay geotextile fabric over the full length of Trench Liner.
7. Place a 150mm layer of 20 - 45mm aggregate material along both sides of the Trench Liner, and at both ends to secure the End Caps. Rake level.
8. Cover the installation with a layer of topsoil, less permeable than the parent soil to help prevent stormwater entering the trench. Leave a slight mound for natural compaction. Turf may be laid over the trench area.

DO NOT COMPACT the trench area or expose it to traffic.

Method 2: Beds: These are generally used where soil conditions do not allow the planned volume of wastewater to drain freely from normal trench systems. Evapotranspiration beds encourage treated wastewater to be taken up by plant roots over a wide area, as well as draining into the soil, offering additional safety for seepage systems. Beds consist of standard width trenches, deeper than normal, with the area above the selected Trench Liner of much greater width, and filled with material allowing easier penetration of roots and transfer of moisture. Bed designs may vary widely, depending on soil conditions.



1. Excavate a bed area between 1000mm and 4000mm wide, at least 300mm deep along a level site contour.
2. Excavate a central trench along the full length of the prepared bed, to take a selected Liner. The top of the Liner should be level with the bottom of the prepared bed, and the trench floor not less than 50mm below the pipe from the Septic Tank or sullage distributor. The floor should be level, evenly raked, with no low spots.
3. Allow at least 75mm overlap for each length of EVERTRENCH Liner.
4. Fit Three Brace Bars into each Standard EVERTRENCH Liner, the first 220mm from the inlet end, and then equally spaced along the excavation.
5. Cut the pipe entry hole in one Trench Liner End Cap, and fit the Caps to the Liner. Connect piping from the Septic Tank or Sullage Distributor.
6. Lay geotextile fabric over the full length of the Liner.
7. Place a 150mm layer of 20 - 45mm aggregate material along both sides of the Trench Liner, and at both ends to secure the End Caps, and rake level.
8. Cover the Liner and the floor of the excavated bed with 100mm of coarse sand, then with sandy loam.
9. Lay a final 150mm layer of topsoil less permeable than the parent soil, to help prevent stormwater entering the bed.
10. Leave a mound for natural compaction. Turf may be laid over the area.

DO NOT COMPACT the bed area or expose it to traffic

EVERHARD INDUSTRIES Pty Ltd recommends a non-woven needle punched Geotextile designed for waste-water disposal land applications