



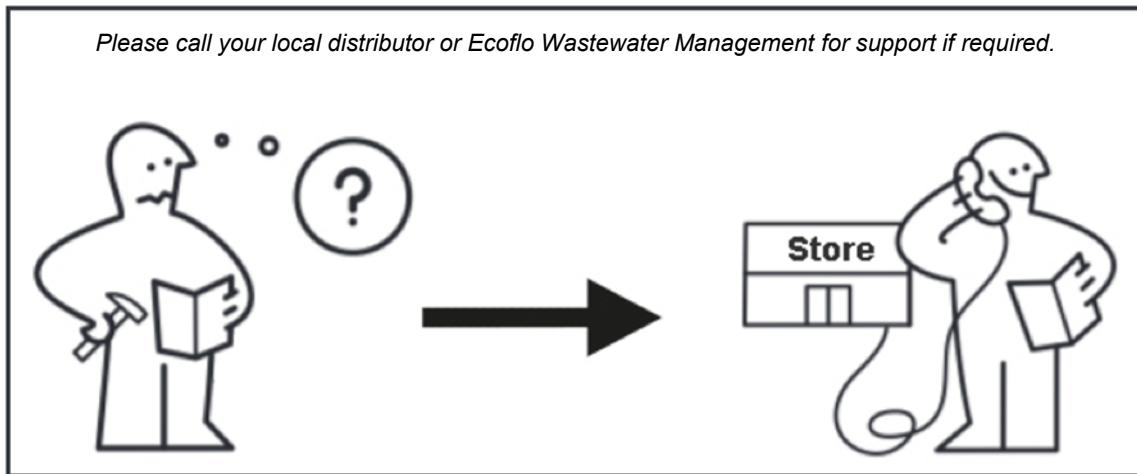
EXCELET CS & EXCELET

Installation & Maintenance Manual



- Thank you for purchasing the Excelet model. 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





Ecoflo Wastewater Management Pty Ltd

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www.natureloo.com.au

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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 packing slip to ensure everything has been delivered.

If anything is missing, please notify your supplier immediately.

For Excelet/Excelet CS-3 or Excelet/Excelet CS-4, there will be 1 or 2 additional chambers and associated fittings.

Items you will need to complete your installation:

- ◇ Wall brackets to fix the vent pipe to the building
- ◇ A length of 100mm DWV vent pipe (to connect to the air exhaust) (length depending on specific installation)
- ◇ 2 x 100mm (DWV) PVC 45 degree bends Or 1x 100m roof cowl

You will also *require* the following materials for the Excess Fluid Absorption Trench (check with your local Authority):

- ◇ 2.0m length of 100mm diameter agricultural pipe
- ◇ 2.0m x 0.5m synthetic or Hessian geotextile mat
- ◇ 0.30 cubic metre 20 mm Aggregate
- ◇ 50mm PVC pipe to connect the hose to the agricultural pipe

Or

Purchase a [Drain Kit](#) from Ecoflo.

The following tools will be required to complete the installation:



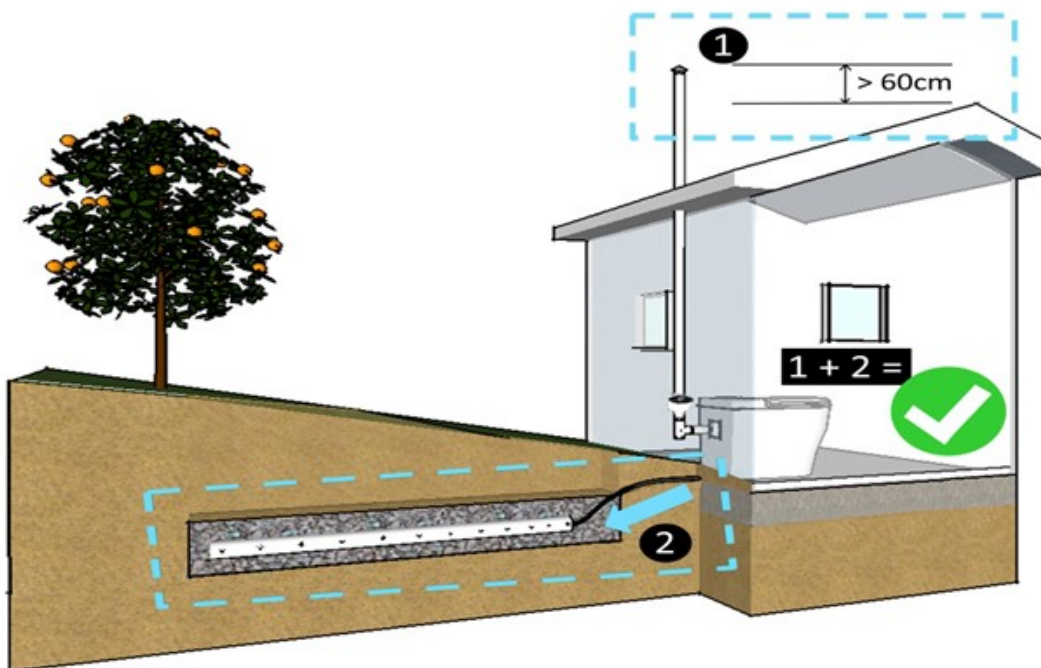
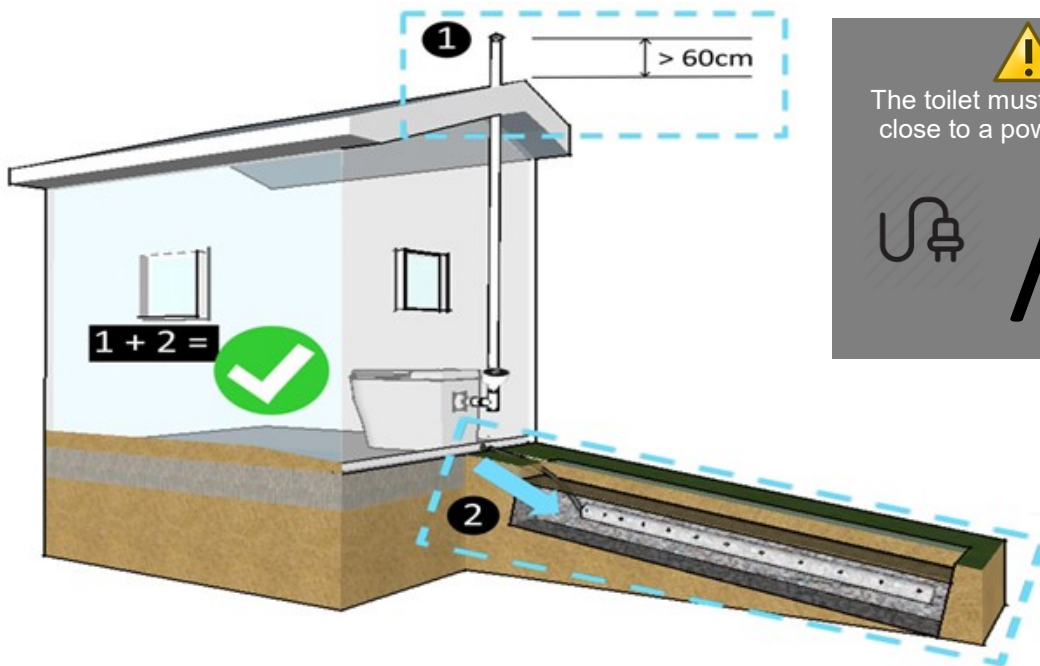
TOILET INSTALLATION

STEP 1: Choose a suitable site to install the toilet.

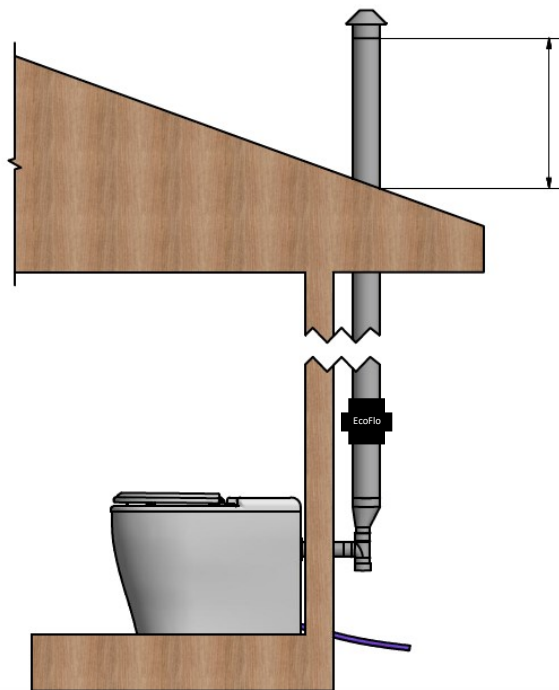
The location of the toilet must have both:

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.

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.

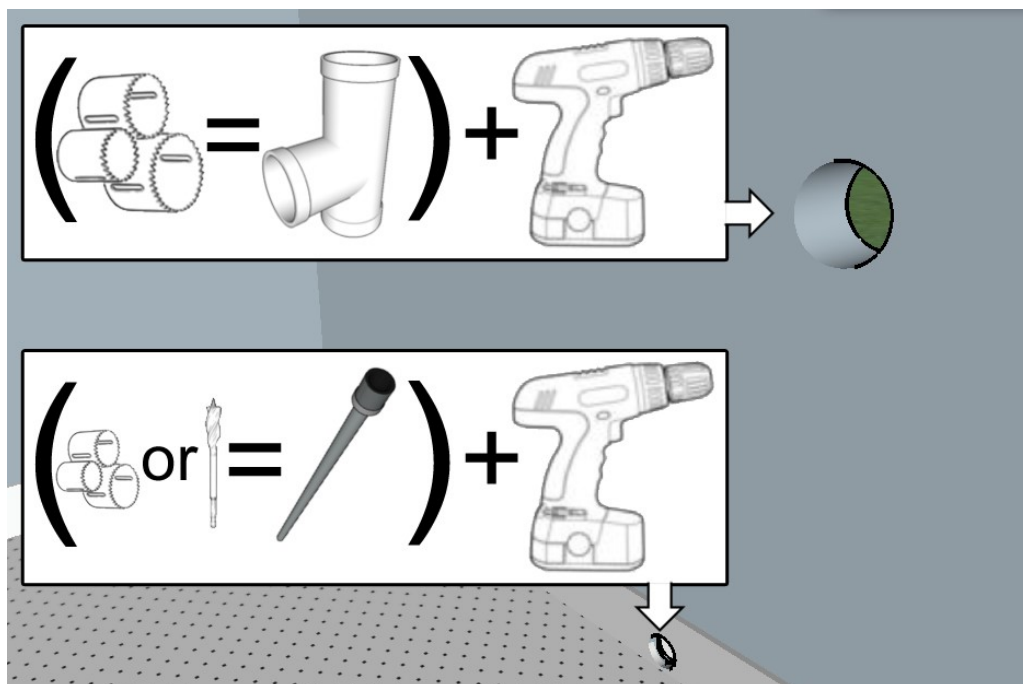


STEP 2: Installing the vent pipe & liquid drain

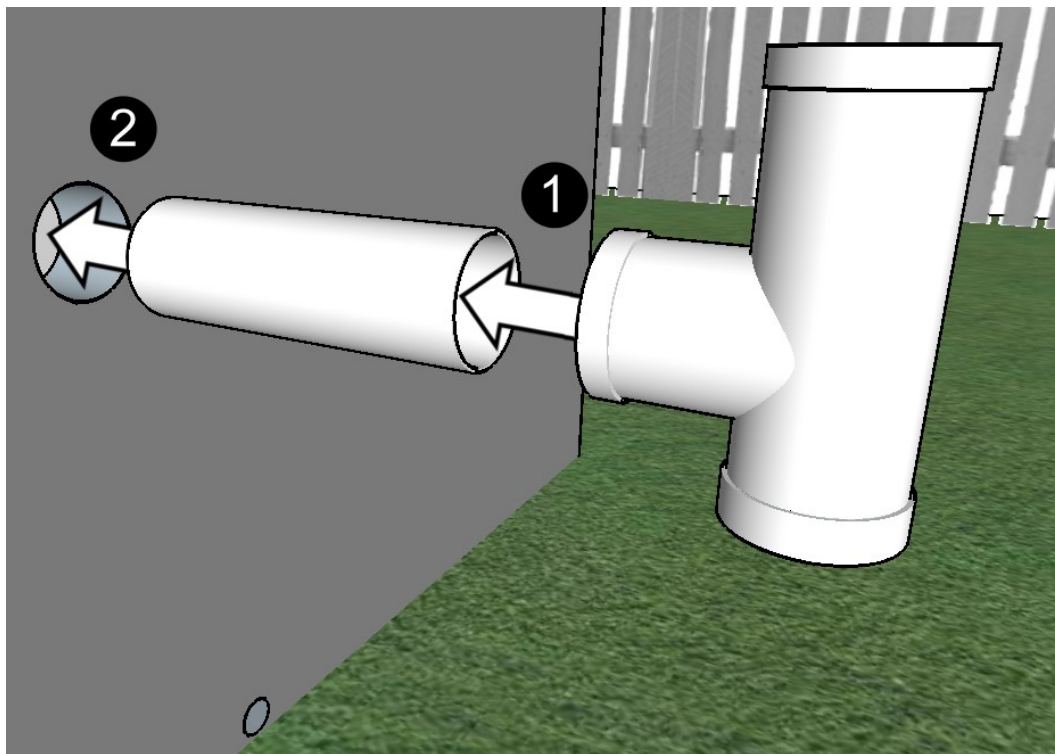


After selecting the toilet's location, place the 50mm DWV PVC pipe through the 50mm Wallace seal in the back of the pedestal. Push the pipe flush against the wall the toilet will back onto (in the correct alignment). Use the PVC pipe to mark a circle on the wall as a guide.

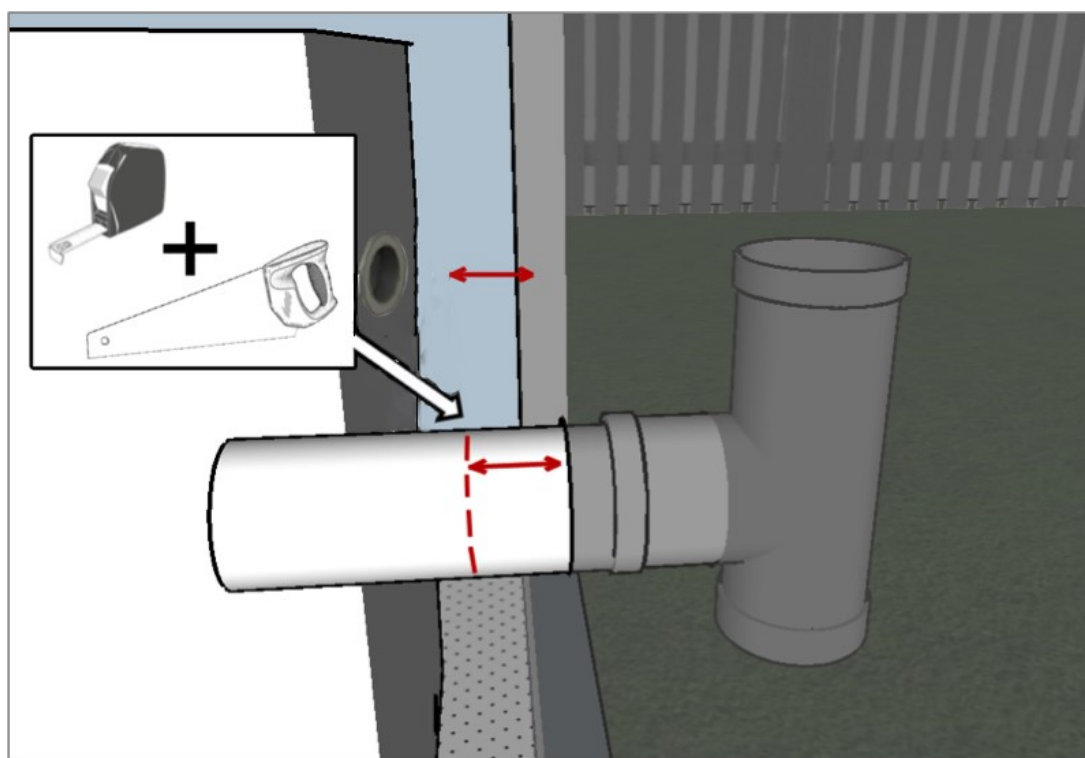
Keeping the fibreglass bottom in the same position, put the 19mm liquid drain hose inside the fibreglass bottom and push the end without the connector through the small hole at the rear of the shell. Using this hose as a guide, mark a circle around the hose as close to the floor as possible.



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



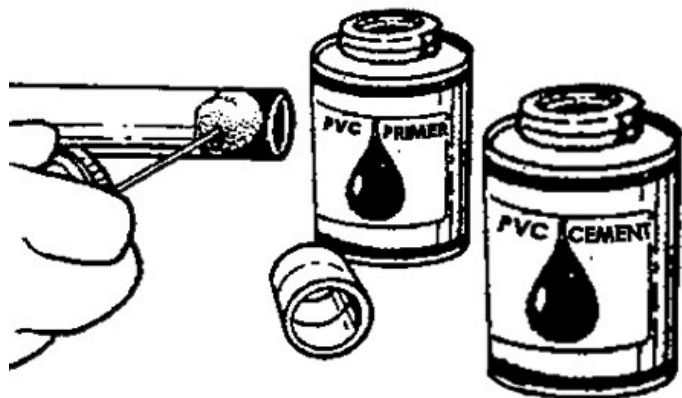
Push the 50mm PVC pipe length provided into the 'T' piece and then insert the 50mm PVC pipe through the wall until the 'T' piece is flat against the wall.



Choose how far you would like the toilet to be from the wall and cut the 50mm DWV PVC pipe to the corresponding length. Most people choose to locate the pedestal as close to the wall as possible (remember to leave enough room for the pedestal lid to be removed when changing chambers).

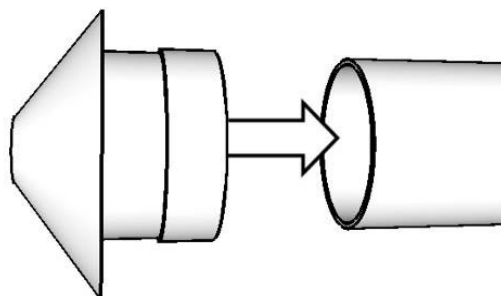


Purchase sufficient length(s) of 100mm PVC vent pipe such that the vent will extend 600mm (2 feet) above the highest point of the roof. Take the fan housing provided to the plumbing store if you aren't sure which type to purchase.



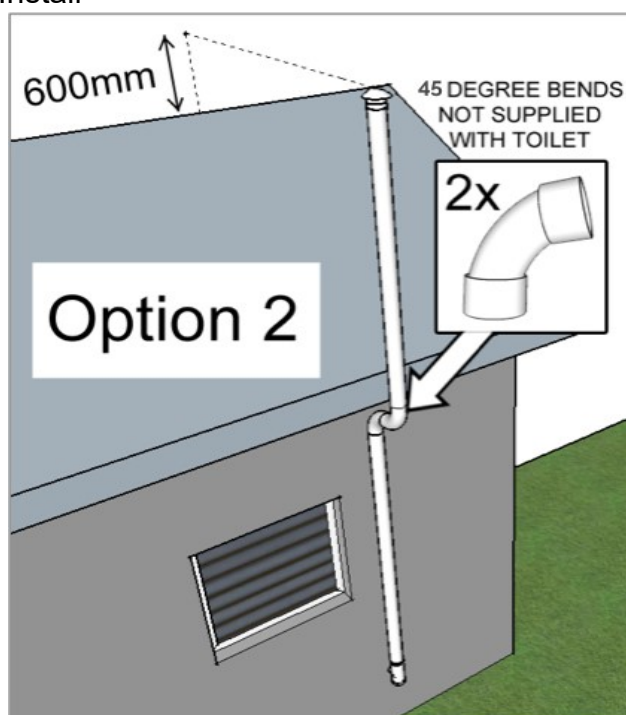
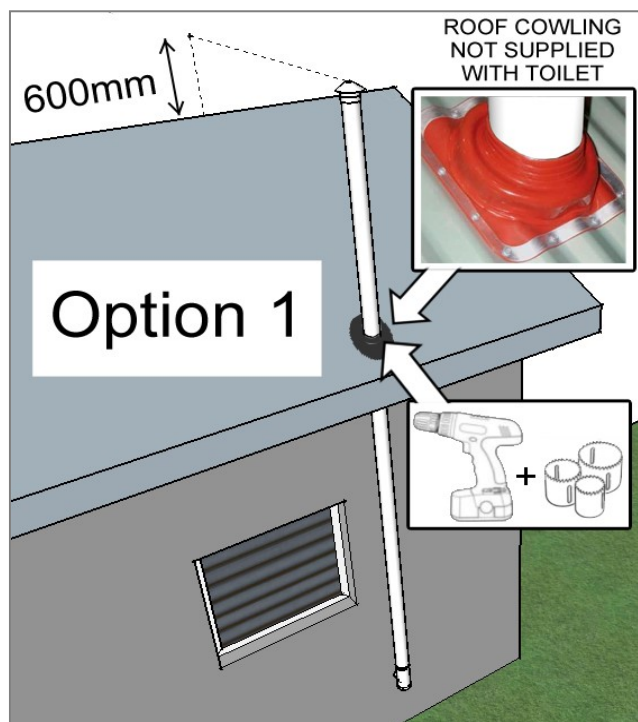
All PVC pipe components, except all components attached to the T piece (including the fan housing) should be glued together using Plumbers PVC glue.

Connect the provided 100mm vent cowl to the top of the vent pipe, and then the bottom of the vent pipe into the fan housing (do not glue this into the fan housing).



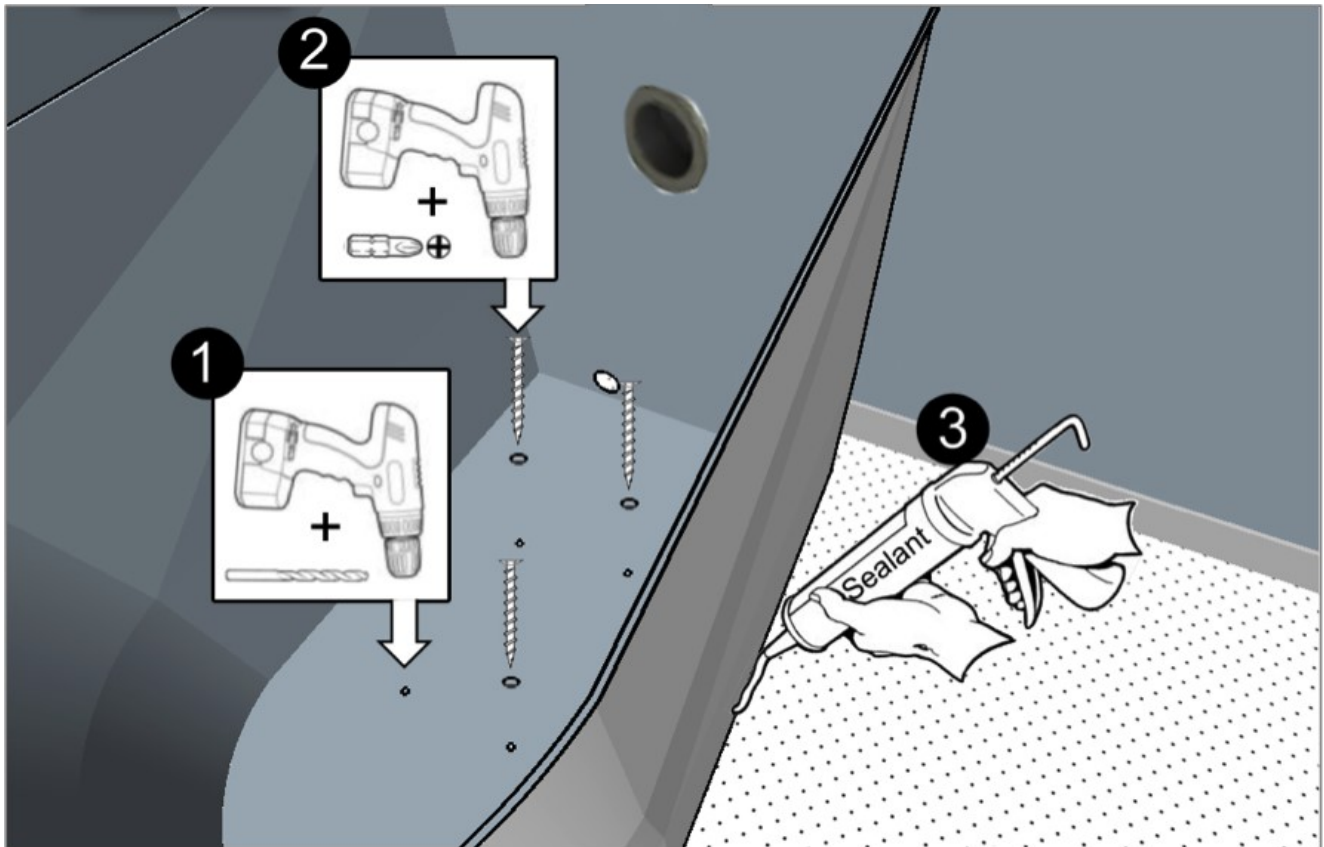
Con-

Install



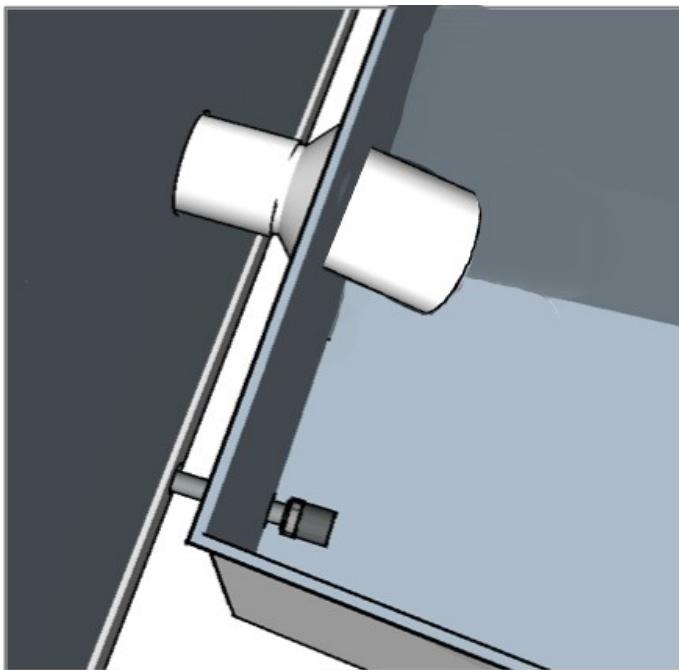
the 100mm DWV PVC pipe as per Option 1 or Option 2 (pictured above). If possible, Option 1 is far better for ventilation as the two 45 degree elbows in Option 2 can slow the air

The moisture trap is a 50 mm PVC 'T' Junction with a small hole in the push-on cap base. Any rain or condensation draining from the vent pipe will be trapped in this junction instead of wetting the fan and shortening its life. The water drains from the hole which needs to be cleaned regularly.



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

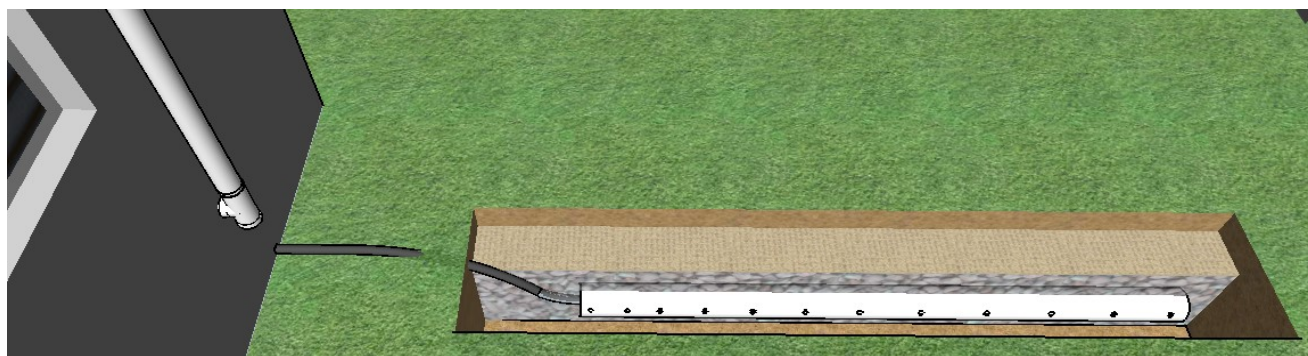
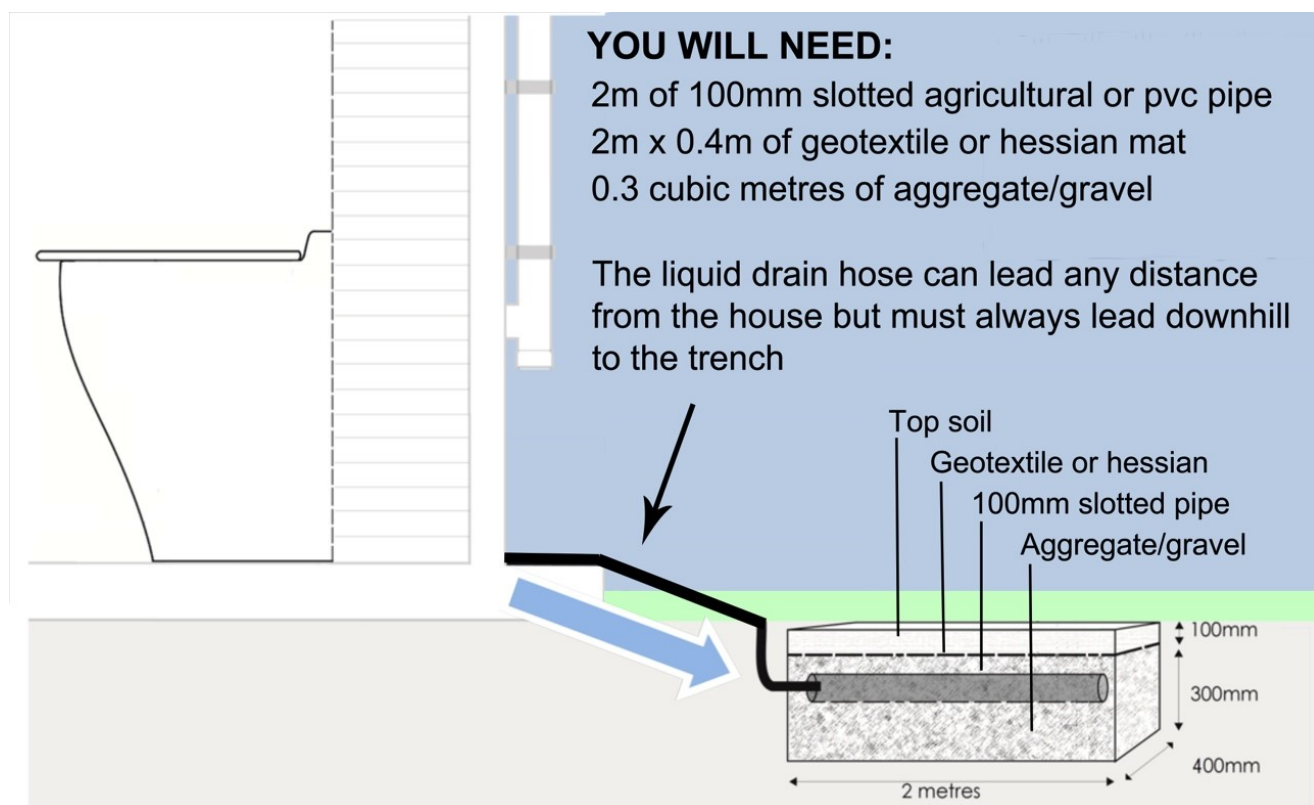
STEP 3: Constructing the liquid drain absorption trench



Place the plain end of the 19mm lilac liquid drain hose through the small hole in the rear of the fibreglass toilet shell. Feed the hose through until the liquid drain valve connection side is resting just on the inside of the shell near the hole.

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.



STEP 4: POWERING YOUR FAN

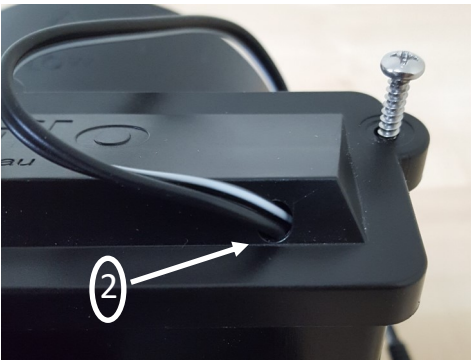


Mains Power

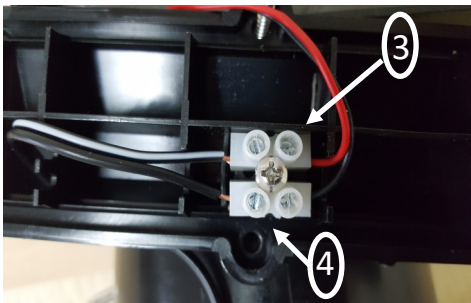
A 240/12 volt regulated transformer is included to run the fan from mains power. Connect the fans to the transformer as follows:



1. On the Fan Housing, remove the four screws from the rectangular access cover and then carefully lift off cover to expose wire connector.



2. Thread the Transformer wire through the hole in the Cover.



3. Insert the Positive wire (white line); from the Transformer, in line with the Red Fan wire and tighten screw to secure wire.

4. Insert the Negative wire (black line); from the Transformer, in line with the Black Fan wire and tighten screw to secure wire.

5. Carefully replace the Cover; back on the Fan Housing and tighten the four screws .

We recommend a spare fan is kept on hand at all times, particularly after a year of use.

Go to [Ecoflo Online Store](https://www.ecoflo.com.au) or call 1300 138 182 for replacement or spare fans.



Solar Power – refer to Solar Panel Installation Manual

Fan Warranty Information

With proper installation and care the fans will provide several years of reliable service. ***However, experience has shown, improper installation may result in the failure or greatly reduced life of this product.***

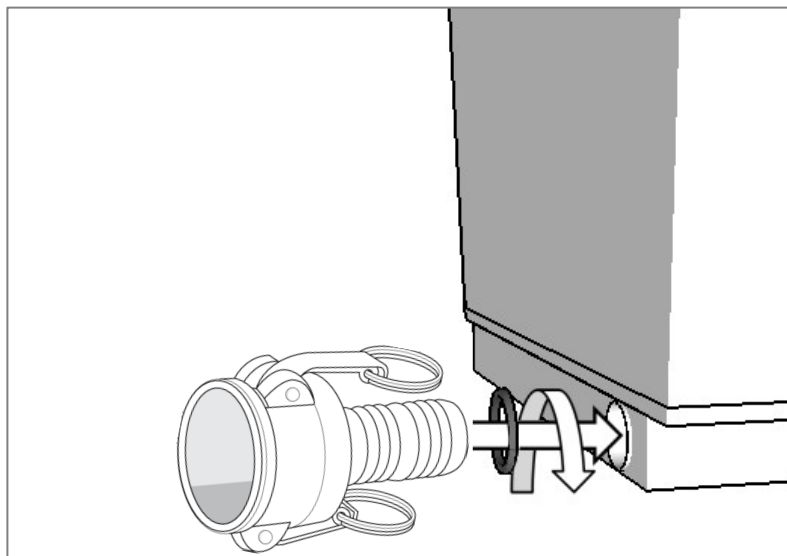
Powering the fans by unregulated power sources such as some solar-based systems or other sources in excess of a regulated 12 volts will reduce the life of these fans and may result in immediate failure. ***If you are considering connection to a source other than a transformer or solar panel as supplied by Ecoflo, you should read the warranty conditions below.***

Limited warranty conditions – 12-volt fan:

The 12-volt fans supplied with your Classic 850 come with a three-month manufacturer's warranty. ***Ecoflo triples the term of this warranty in addition to the manufacturer to 12 months from date of purchase and will replace any fan that fails during the warranty period but only under the following conditions:***

- ◇ The fan must be connected and powered by either a 12-volt transformer or solar panel supplied or otherwise recommended by Ecoflo. Connecting your fan directly to a power source other than one supplied or specified by us may result in immediate damage to the fan and will void all warranties.
- ◇ The fan must be installed as specified in the owner's manual supplied with the toilet and must not be modified or altered in any way.
- ◇ In the event of failure during the warranty period, the faulty fan must be returned to Ecoflo who will ship a replacement by regular mail service on the next business day providing the above conditions have been met.

STEP 5: Assembling the compost chamber-

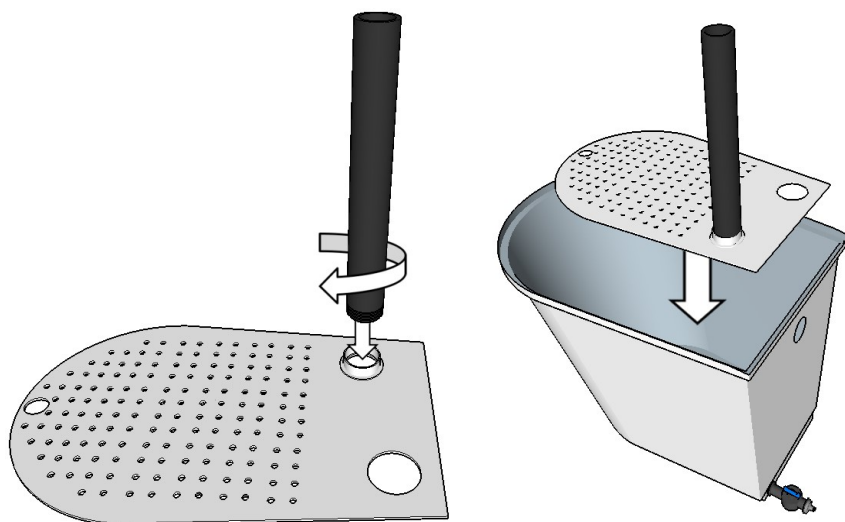


IMPORTANT:

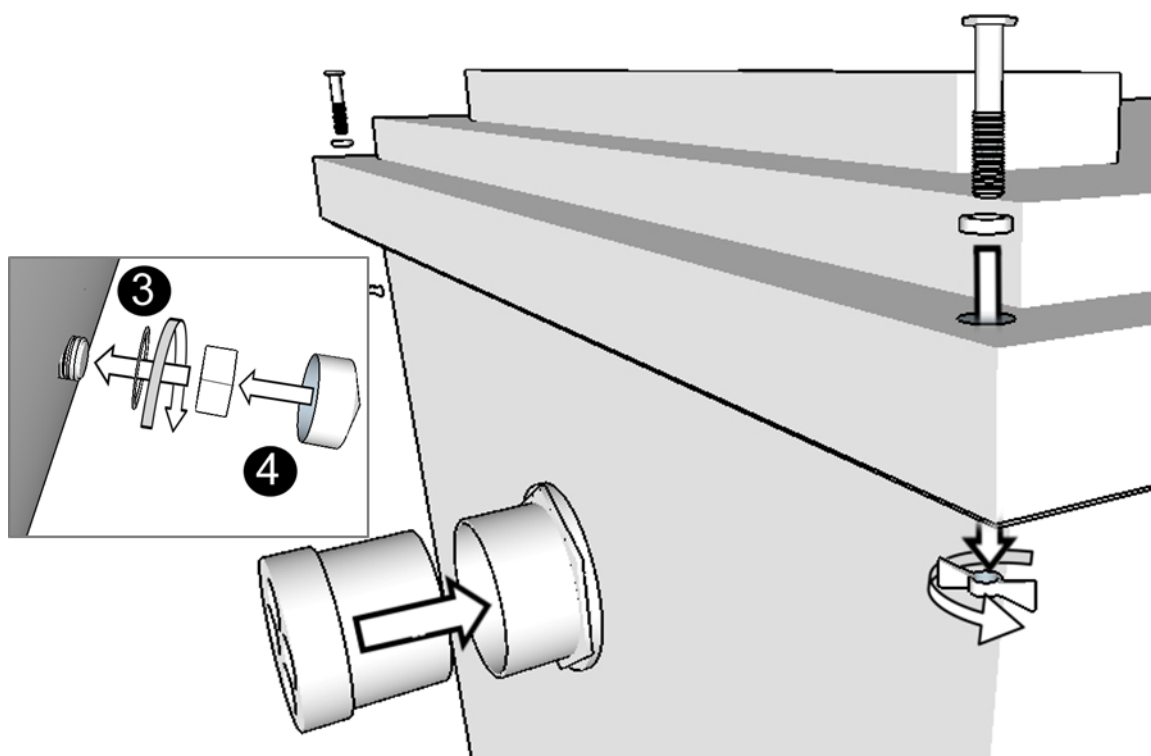


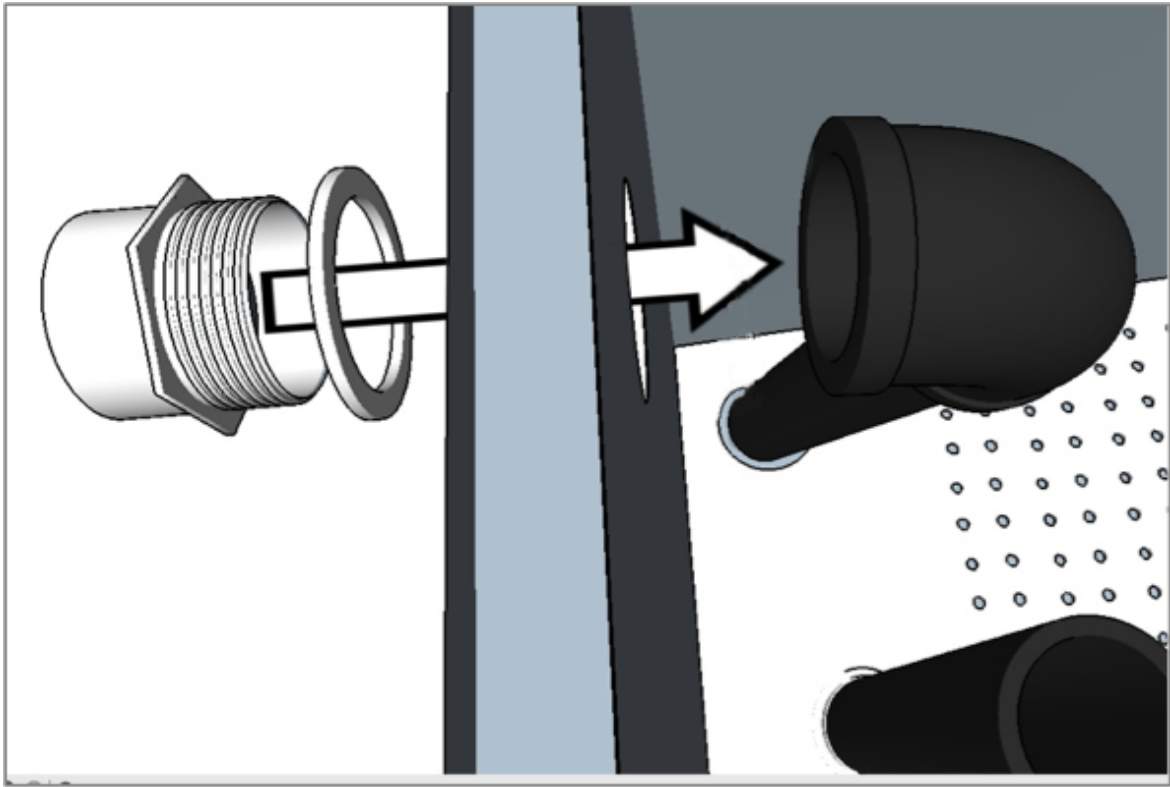
Do not glue any of the compost chamber components together.

Screw the Cam-Lock into the flat side of the compost chamber at the base with the tap in the open position (pointing along the direction the liquid will flow).



Screw in the 40mm black threaded breather pipe into the raised threaded hole. Make sure the pipe and hole are well aligned when you start turning. Tighten until most of the thread is in the hole (leave 5-10mm showing). Place the false floor inside the chamber with the flat side down.



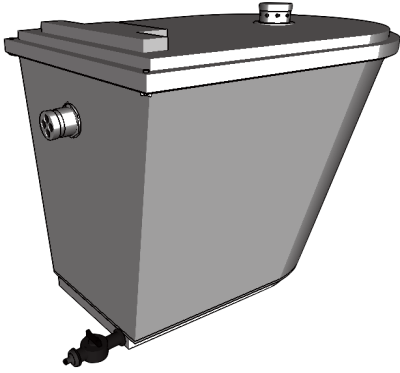


Fit the 40mm rubber washer around the threaded part of the 40mm MI adaptor. Push this end through the hole in the rear wall of the compost chamber. While holding the socket in place put the 40mm DWV PVC pipe with the 90° elbow into the hole in the floor at the back of the chamber. Angle this pipe such that the elbow is now aligned with the threaded end of the socket and screw these components together. The socket and elbow should now be firm against the wall of the chamber and the pipe with the elbow resting just below the false floor. Use a multitool wrench if you cannot tighten the socket sufficiently by hand.



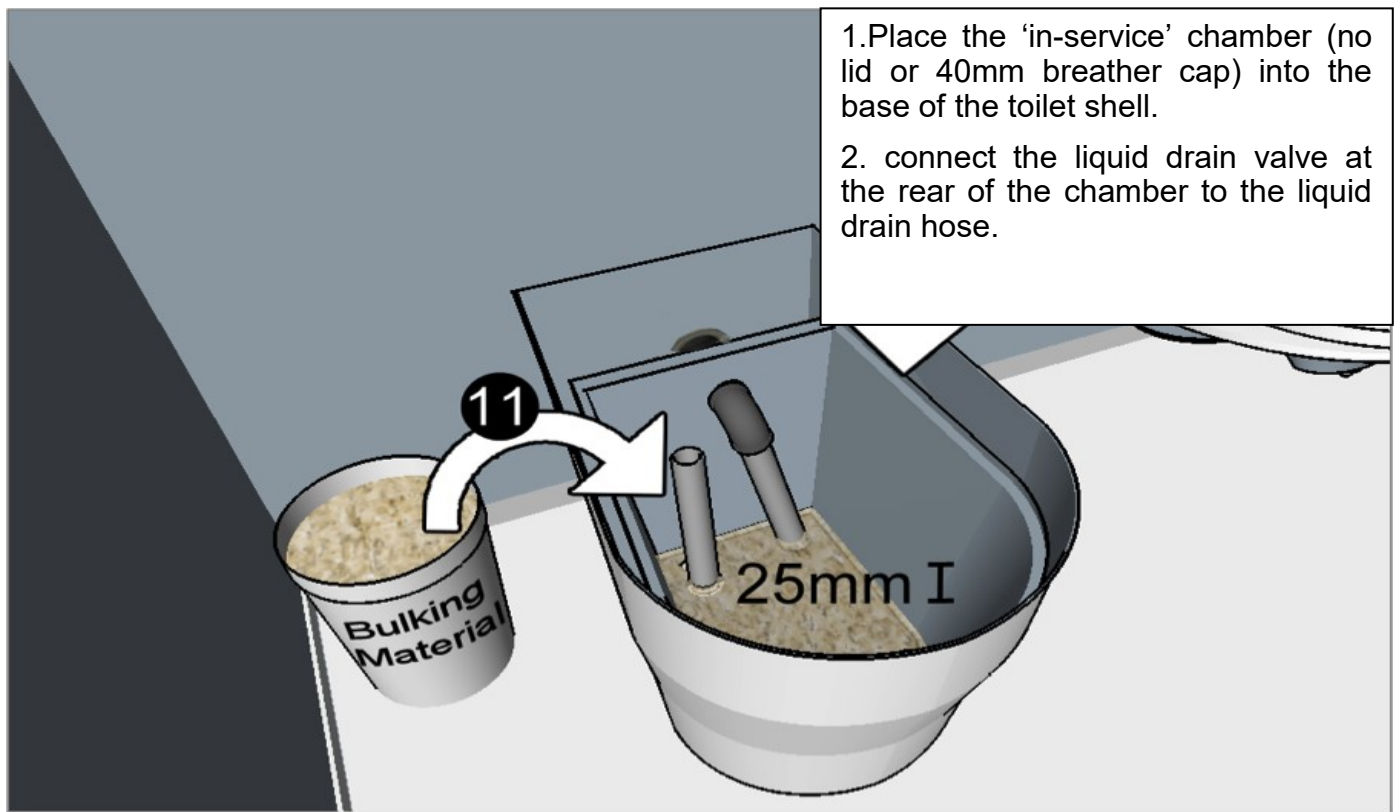
Once finished the compost chamber should look like the picture above. Repeat for all remaining chambers.

Place the lid onto the chamber bottom and fasten in place with the bolt and wing nuts at the back corner of the chamber. Remember, there will be one less chamber lid than compost chamber bottoms (i.e. the 'in-service' chamber will not have a lid whilst it is in-use).



For the 'out-of-service' chambers with lids, push the 40mm removable breather cap (unthreaded) into the 40mm socket screwed into the rear of the chamber. This completes the 'out-of-service' arrangement which should prevent the entrance of insects whilst allowing air to circulate through the compost when the chamber is composting outside.

Once assembled you can store these chambers wherever is convenient whilst the first chamber is in use. The chambers are made from UV resistant plastic and come with a 10 year warranty.



Ensure the valve is open by turning it to be parallel with the direction of the drain hose. Push the chamber as far forward as possible so the rim of the compost chamber is touching the front of the fibreglass bottom.

As with every new compost chamber, layer the bottom of chamber with 25mm of bulking material (coarse mulch that will not fall through the holes in the floor).

The shell top can now be placed onto the base. Do not glue the top to the base as it will need to be removed from time to time to rotate the chambers.



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

After 5 days add half a pack of Nature Quick microbes to the chamber. Follow the instructions on the pack and use the other half in 2 weeks.



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 spray flask 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 process in the new chamber.



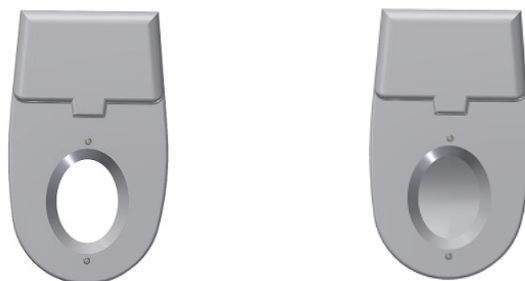
Contact [Ecoflo](#) for further supplies when required.



CARE & MAINTENANCE

Operating the Chamber Screen: The Excelet CS top comes with a movable screen to obscure the view into the compost chamber. Follow these instructions to operate and maintain the barrier.

Open the barrier before use by either lifting the entire seat or by sitting on the toilet.



To close the screen simply put the seat & lid down.

Use the Nature Flush enzyme spray and toilet paper should the screen require cleaning.

Maintain Correct Moisture: To compost effectively, the pile should be kept moist (see 'the composting process' – page 26). Assuming no urine enters the chamber add one mug of water per person per week. This is an average; add less till the chamber is half full. Add more in summer. Pour the water over the whole surface not just in one spot. If too much water is added it will flood the bottom of the chamber and turn the system anaerobic and malodorous. It is best to use diluted Nature Flush enzymes which accelerate composting and provide a pleasant fragrance to the toilet.

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

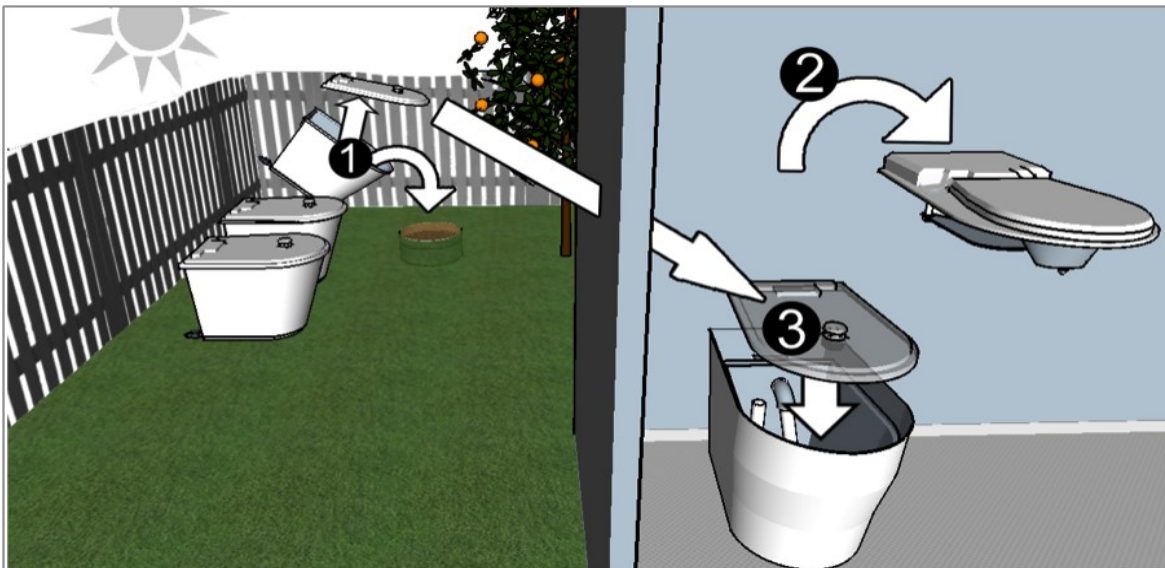
Cleaning the Shell and Seat: Just like any other toilet system, you will need to clean it occasionally. To do so, use the Nature Flush enzymes as per the instructions on the bottle with toilet paper. Soiled toilet paper can simply be dropped into the toilet.

Fan and Insect Screen: Every month check that the fan is turning freely and clean the hole at the bottom of the moisture trap as well as the fly screen inside the trap.

EXCHANGING THE COMPOST CHAMBERS

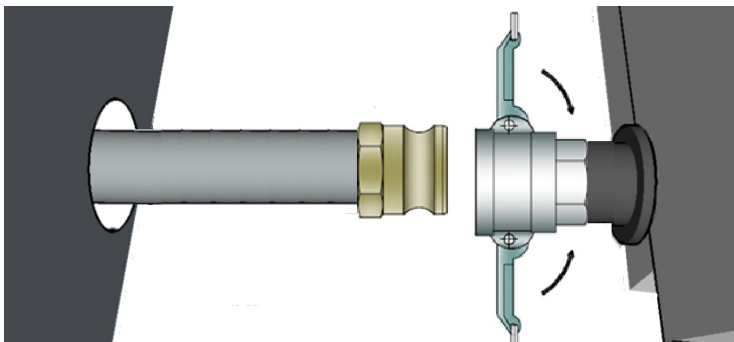
The 'In-Service' compost chamber will need to be changed on a regular basis. The rate of filling will depend on the number of users. When the chamber becomes full, you will need to swap it with a new or previously composted chamber by following these instructions.

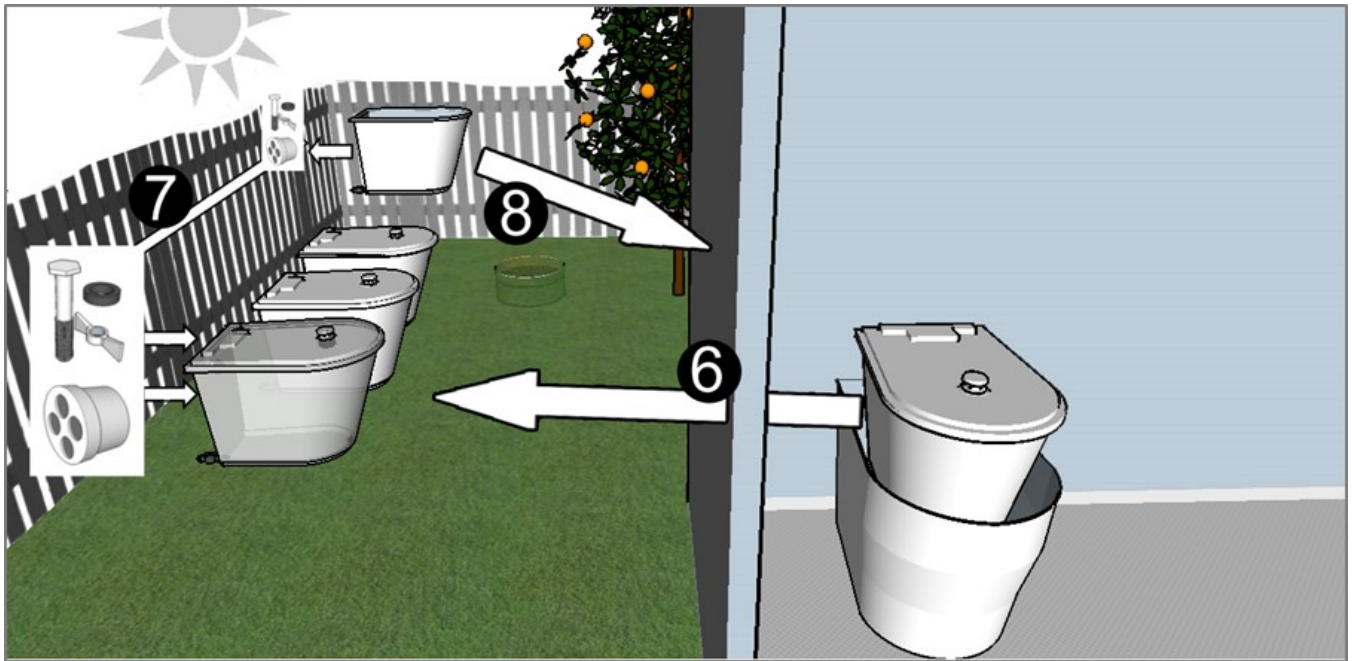
Please ensure you wear protective glasses, face mask & gloves.



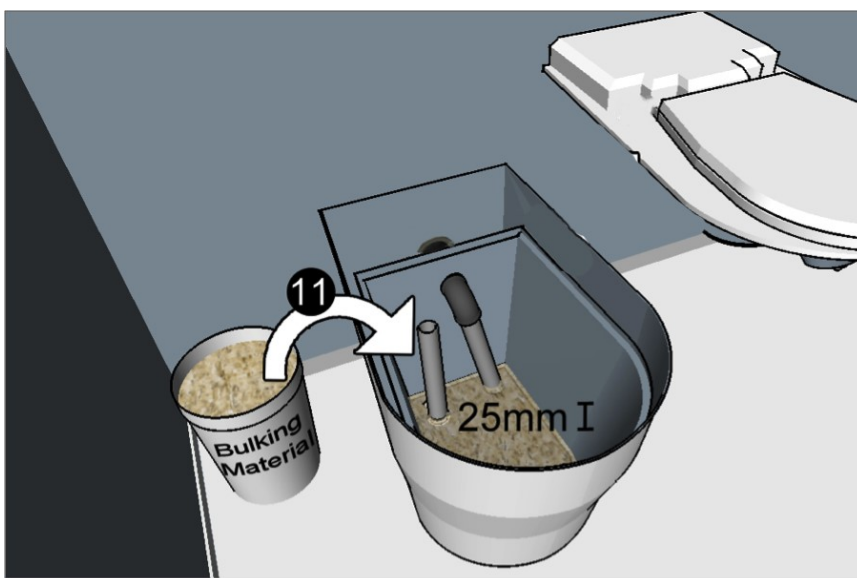
1. 'Identify the compost chamber that has been composting in the sun for the longest time. Remove its lid by unscrewing the wing nuts and empty the compost into a hole (**not within 100m of a potable water supply**) on your property. Cover the top of the compost pile with at least 100mm of soil or mulch. Alternatively, check with your local government if it would allow you to mix the toilet compost with your general garden compost.
2. Put a couple of handfulls of bulking material into the In-Service chamber before removing the fibreglass toilet top to access the full compost chamber.
3. Place an out-of-service lid firmly onto the full chamber & secure with wing nuts & bolts.

4. Release the Cam-lock levers & pull out the hose.
5. Place Dust-Plug into Cam-Lock & lock levers. Replace the full chamber with empty one & connect the hose to the Cam-lock on the latter.





6. Place the full chamber outside in a sunny well vented position to speed up the break-down process.
7. Insects or small animals may enter the chamber if you do not:
8. **a.** Fasten the lid to the full compost chamber using the bolt and wing nut from the now empty compost chamber.
9. **b.** Take the 40mm breather cap from the 40mm socket in the rear of the now empty chamber and push this into the rear of the full chamber.
10. Place the recently emptied compost chamber into the fibreglass toilet bottom. Before proceeding to Steps 9 and 10 first check the liquid drain valve is clear of any blockages/debris.
11. Push the liquid drain valve into the hose
12. Open the valve by turning it parallel with the drain hose.



13. Add 25mm of bulking material as bedding for the empty chamber. To accelerate the composting process add Nature Quick Microbes as per the instructions on the packaging or several scoops of compost from the hole after a couple days of using the toilet.

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 'In-service' chamber is filling too quickly:

This may be caused by a number of factors:

The temperature is too low for effective composting.

With the Classic 850 you can improve this problem by wrapping the chamber in insulating material (including the base), OR use a chamber with a heating element option (page 9).

Insufficient air flow.

This can be caused by a broken fan or the chamber being too full. Check the fan is operating and the level of the pile is not too high. This problem could also be caused by a blocked insect screen in the cowl.

The pile being too wet.

This could be the result of the outlet of the liquid chamber being blocked and causing the upper chamber to flood. (This would also cause the fan to malfunction). Check the drain hose is not blocked and flush with a hose if necessary. You may need to change chambers if the blockage is in the chamber and thoroughly flush out the contents of the liquid chamber.

Antibiotics and disinfectants will slow down or stop the process. Restart the composting by reintroducing microorganisms. In many of these situations Nature Flush Enzymes will help solve inefficient composting by breaking down the solids and thereby speeding up decomposition.

The 'Out-of-service' chamber is composting too slowly:

This may happen due to one or more of the problems described above. At this point the most effective course of action is to aerate the pile by turning it over with the Compost Mixer. You could also add 500ml of Nature Flush Enzymes from a domestic spray bottle as you turn the material and add a quantity of Nature Quick Microbes.

You should consider locating the chamber where it has a greater exposure to direct sun light. However, if you find the pile is drying out too quickly put the chamber in a shadier position.

If you find none of the above measures are effective, it means the local climatic conditions are less than ideal. This can happen in cold or humid conditions and you will need to purchase an additional chamber in order to provide an extended composting period.

If you need to change your 'In-service' chamber and the 'Out-of-service' chamber is not yet composted dispose of the waste as normal and order a new chamber from [Ecoflo](https://ecoflo.com.au).

If the 'half-life' is too great, we suggest ordering a chamber with a Heating Pad for the winter months. Please consider the power requirements (12volt 100Watt 8.5Amps) when using the Heating Pad option off-grid.



The odour from the 'Out-of-service' chamber is unpleasant:

If the 'Out-of-service' chamber is not connected to the vent pipe it may smell immediately after it has been taken 'Out-of-service'. Odours can be greatly reduced or eliminated by *covering the top of the pile with straw or dry grass clippings*. You may wish to do this before disconnecting the chamber.

The odour from the 'In-service' chamber is unpleasant:

If this is not caused by a *failed Fan* or *associated Screen* or a blockage in the *Vent Pipe* or *Liquid Drain Hose* or *Fitting*. Please see the “***'In-service' chamber is filling too quickly***” section for how to resolve this problem.

The power has failed resulting in toilet room odours:

Cover the pedestal with cling film until the power is restored. To avoid a recurrence of this problem, have us send you our Uninterrupted Power Source (UPS). The UPS will cut in with power from a 7-amp hour battery whenever the mains power goes down.

Helpful Hints from our customers :

- Paint the Vent Stack black to produce an upward air flow.
- Add a wind assisted turbo vent to the Vent Stack.



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 rotomoulded component	10 years
Any fibreglass 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.
- The faulty fan is returned to Ecoflo for inspection, if required.

Providing the above conditions have been met replacement fans are shipped the same or following day free of charge by regular post.

MAINTENANCE SCHEDULE

Please place this maintenance schedule close to your 'In-service' Chamber and complete the table as you rotate your chambers.

Model: Nature Loo Excelet CS & Excelet

Date First Put into Service: ____/____/____

The 'Out-of-service' chamber must compost for a minimum of 5 months from the date it was first rotated 'Out-of-service'.

Date chambers were last rotated:



CAUTION

Wear protective clothing including gloves and eyewear when servicing, rotating or emptying chambers.



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:

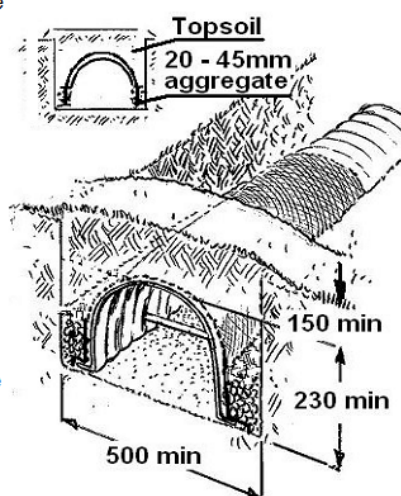
- ☐ The Volume of wastewater, based on household size and appliances.
- ☐ The rate of absorption of the surrounding soil.
- ☐ Limits imposed by site conditions, such as slope, contours, prevailing wind and permanent shade etc..

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.

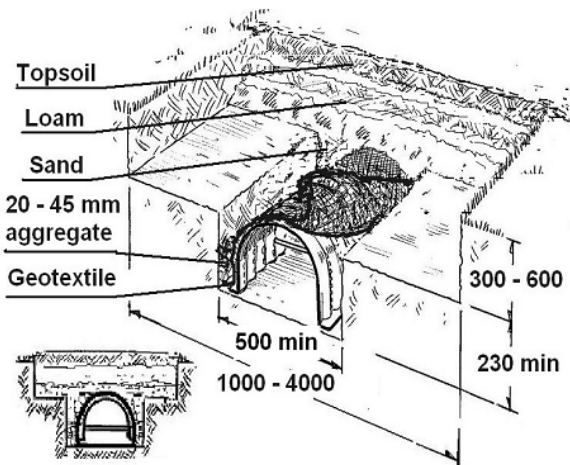
1. Excavate the trench along a level site contour, with the floor not less than 50mm deeper than the invert of the pipe from the Septic Tank or sillage distributor, with at least 150mm cover over the top of the Liner.
2. The trench floor should be level, evenly raked, and have no low spots which would 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 Sillage 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 sillage 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 Sillage 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