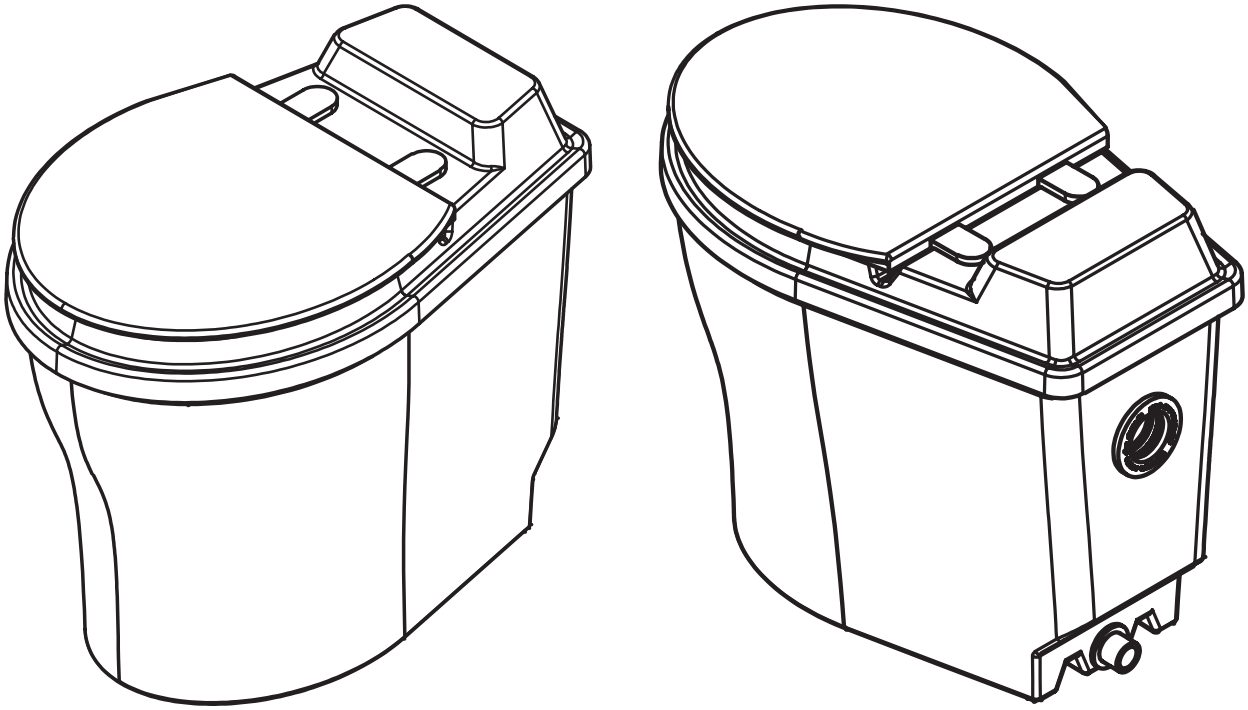
NL2

OWNER'S MANUAL

AUS | NZ



nature loo

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SPECIFICATIONS

Capacity: 2 person full time use

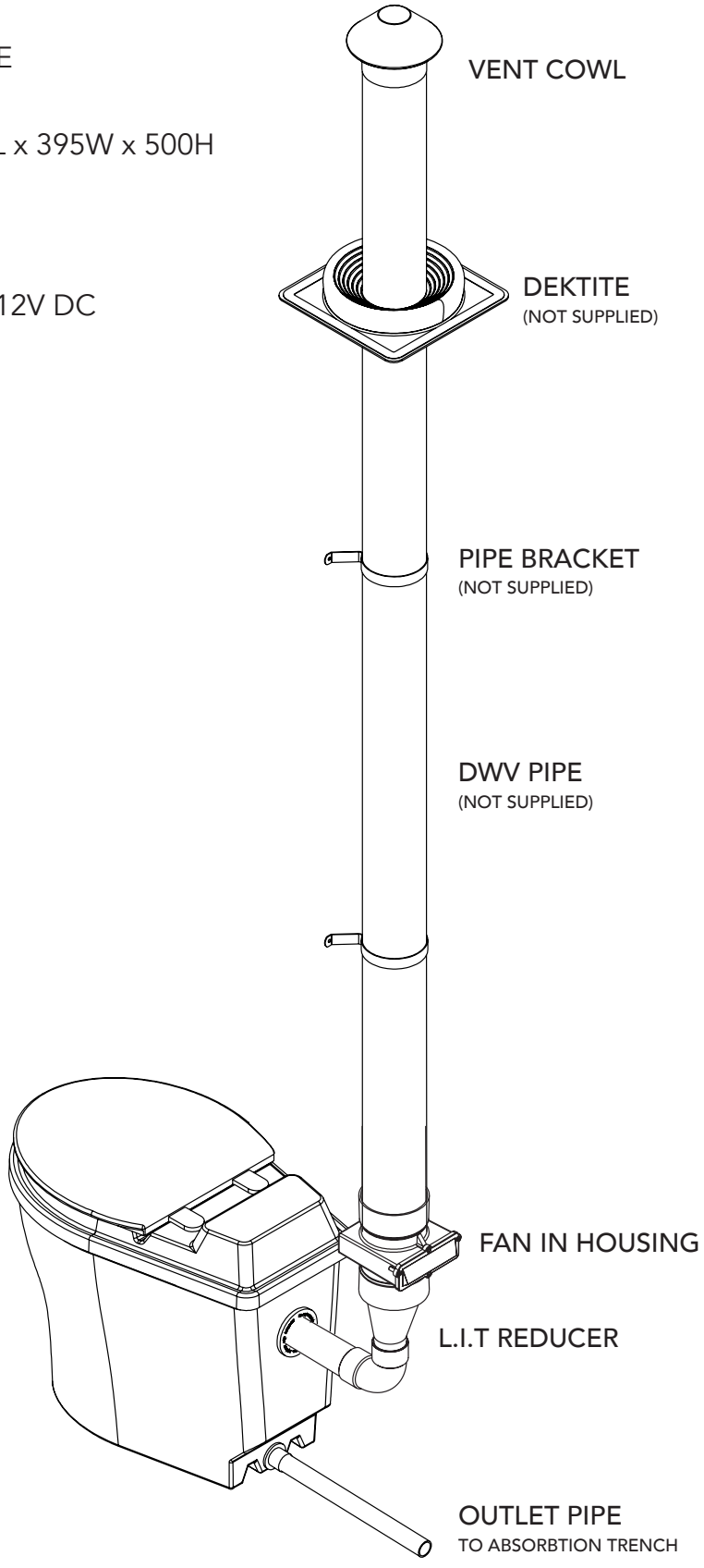
Max. Load Bearing: 130kg

Material: LDPE

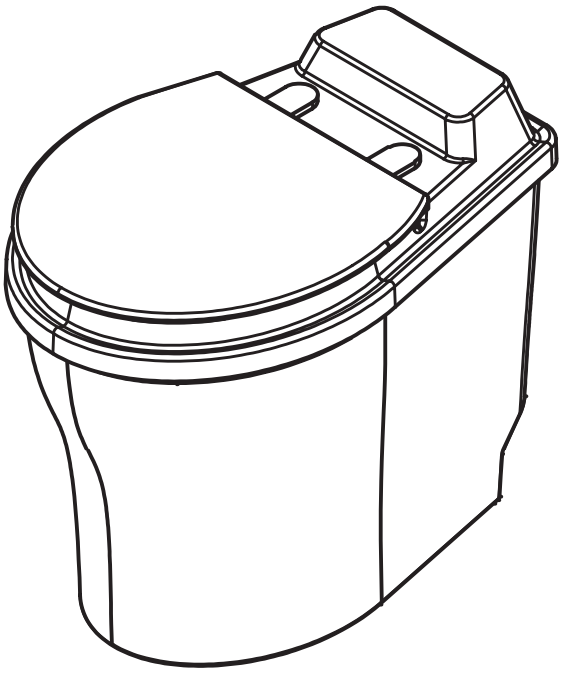
Dimensions: 620L x 395W x 500H

ELECTRICAL REQUIREMENTS

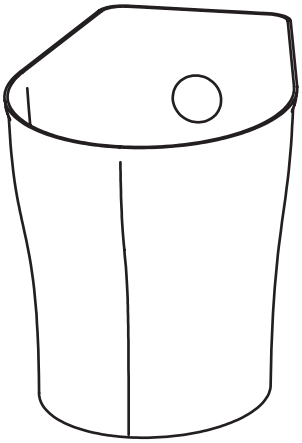
Ventilation Fan: 5W 12V DC



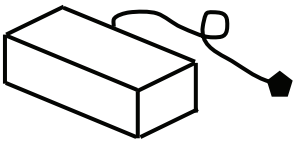
WHAT'S IN THE BOX?



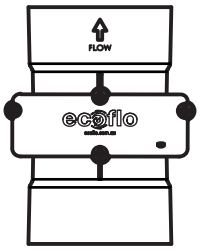
1x NL2 PEDESTAL WITH SEAT & SPIGOT



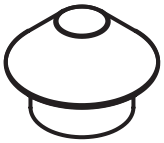
2x CHAMBERS



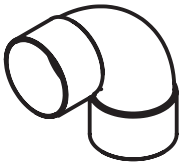
1x 12V TRANSFORMER



1x FAN HOUSING

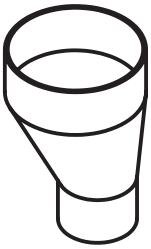


1x VENT COWL

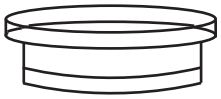


1x 90° 50mm DWV BEND

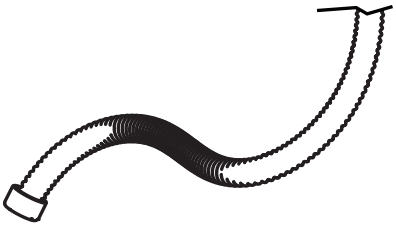
1x 50mm DWV PIPE - LONG



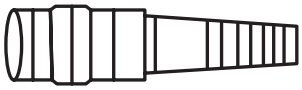
1x REDUCER



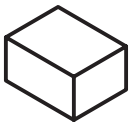
1x 50mm WALLACE SEAL



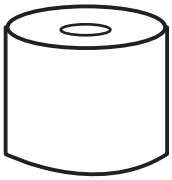
1x 25mm SULLAGE HOSE



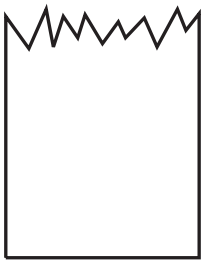
1x HOSE TAIL



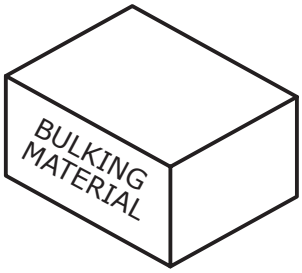
2x MOUNTING BLOCKS



1x TOILET ROLL

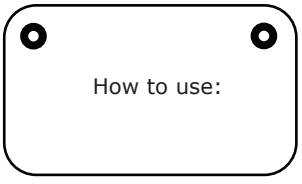


1x BAG OF MICROBES



2x HEMP BULKING MATERIAL

1x ENZYMES & SPRAY BOTTLE

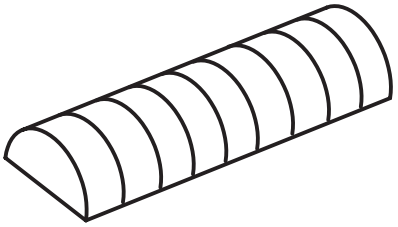


1x 'HOW TO USE' SIGN

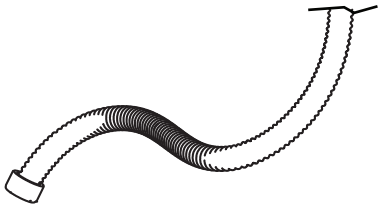
ADDITIONAL ITEMS (NOT INCLUDED)

Depending on the circumstances of your installation you may require the following items.

FOR THE EXCESS FLUID DRAIN



TRENCH ARCH DRAIN

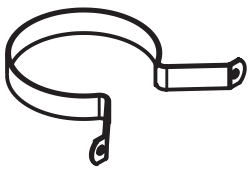


AGI DRAIN WITH SOCK

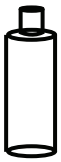
GRAVEL

A Drain Kit can be purchased from ecoflo.com.au

FOR THE VENT PIPE

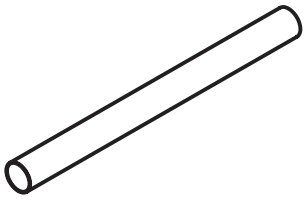


PIPE BRACKETS



PVC GLUE

DEKTITE



100mm DWV PIPE

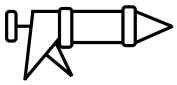
A Vent Kit can be purchased from ecoflo.com.au

TOOLS REQUIRED

Screwdriver
(Philips/plain)

Spade

Silicone Adhesive
Sealant

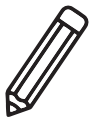


Caulking gun

PPE

Jigsaw

Tape Measure



Marker

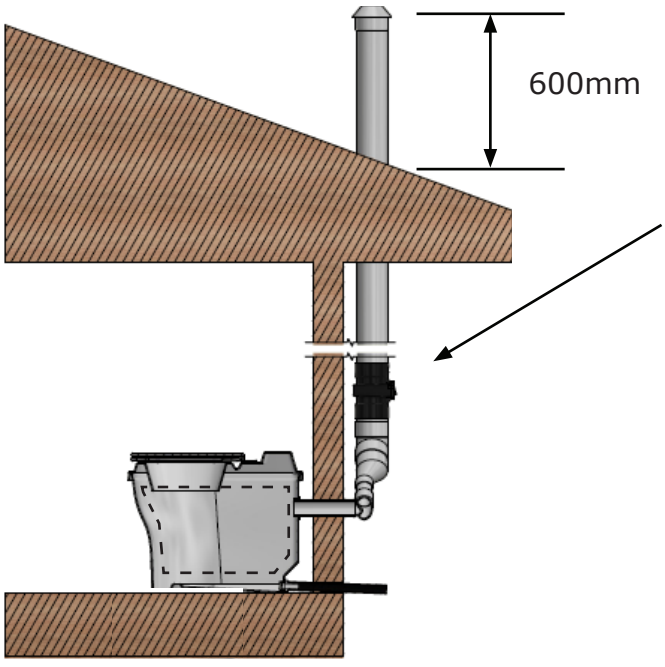
Spirit Level

Hole Saw
38mm & 65mm
(Min. sizes)

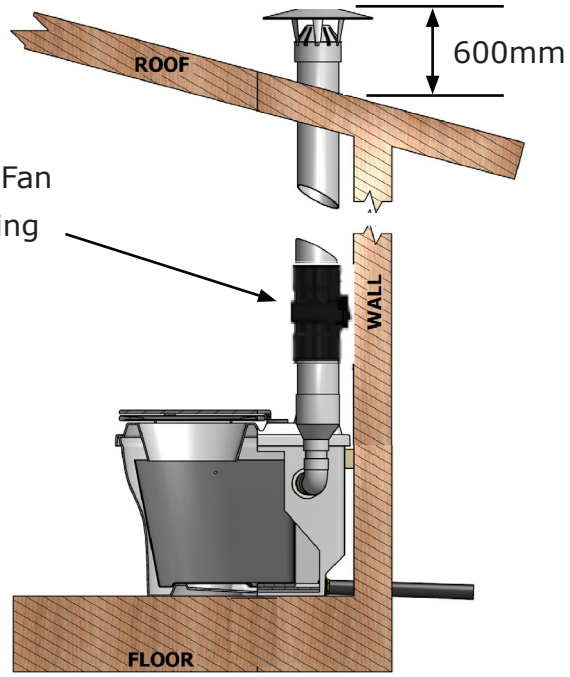
NL2 INSTALLATION OPTIONS

The NL2 can be installed close to a wall with the vent pipe exiting directly through the rear wall (See OPTION 1). Alternatively, the vent pipe can be installed on the inside, exiting up through the ceiling (See OPTION 2. This must be indicated at the time of purchase).

OPTION 1
Ventilation Pipe Installed Outside

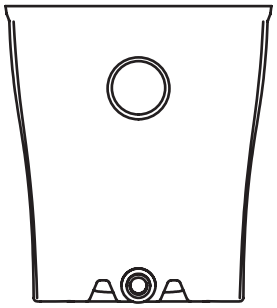


OPTION 2
Ventilation Pipe Installed Inside

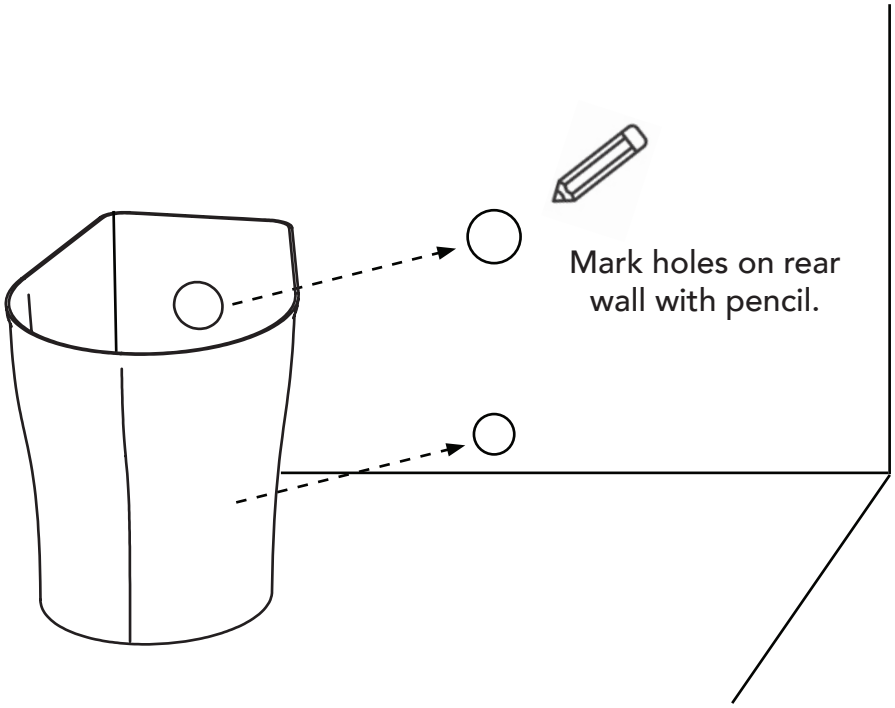


NL2 INSTALLATION INSTRUCTIONS

1

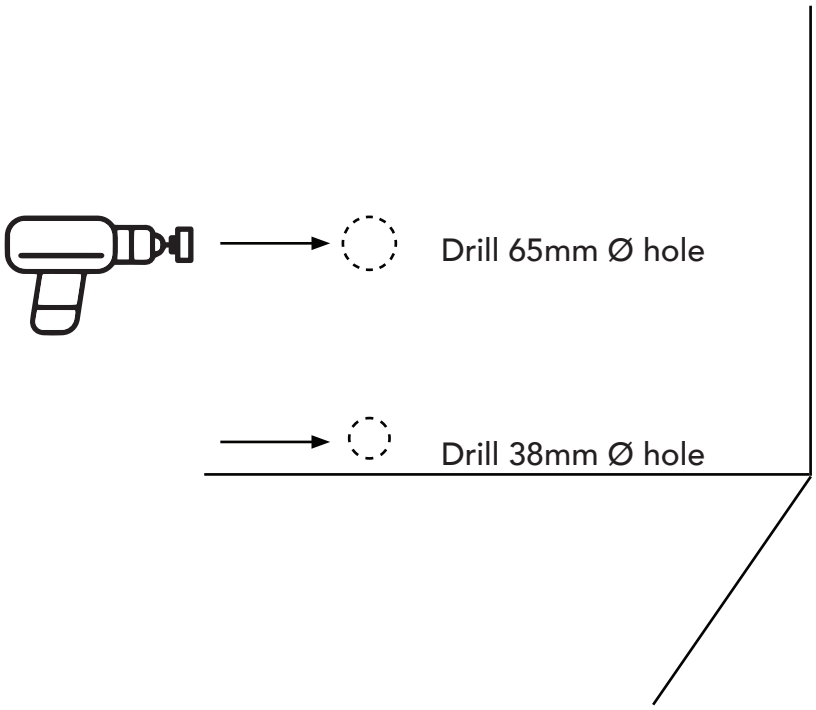


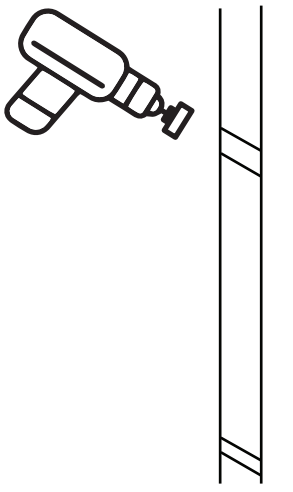
BACK VIEW



2

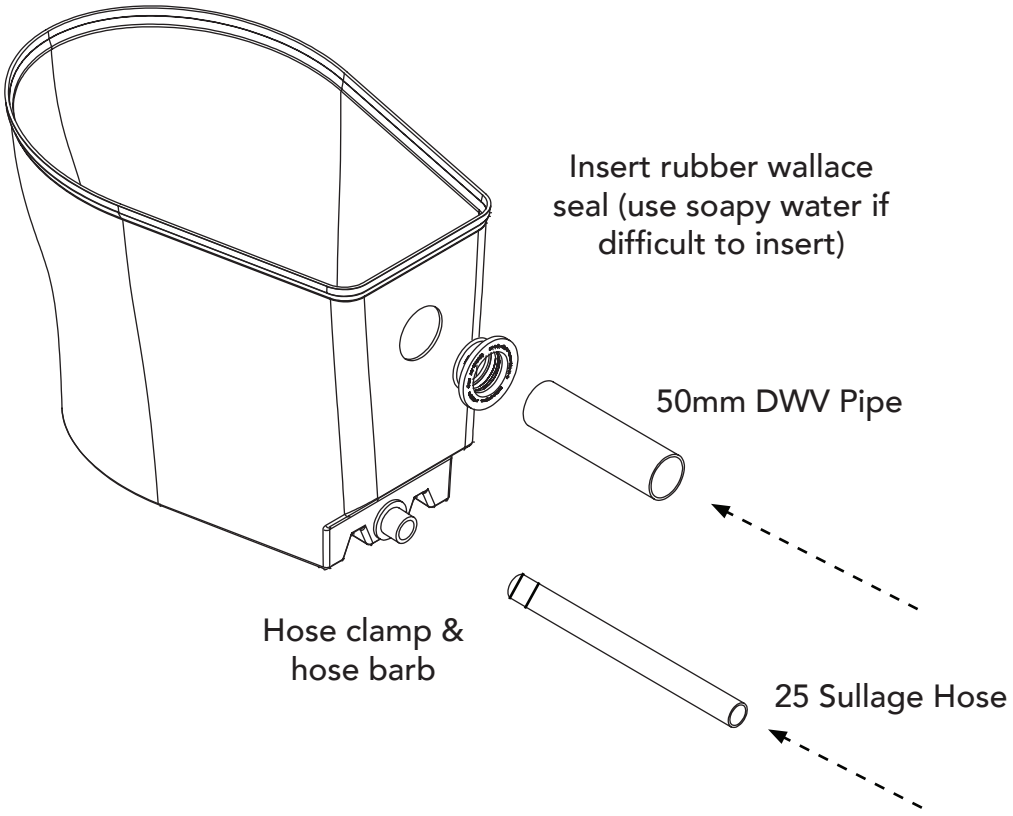
Ensure the hole is
sloping downwards to
the outside.





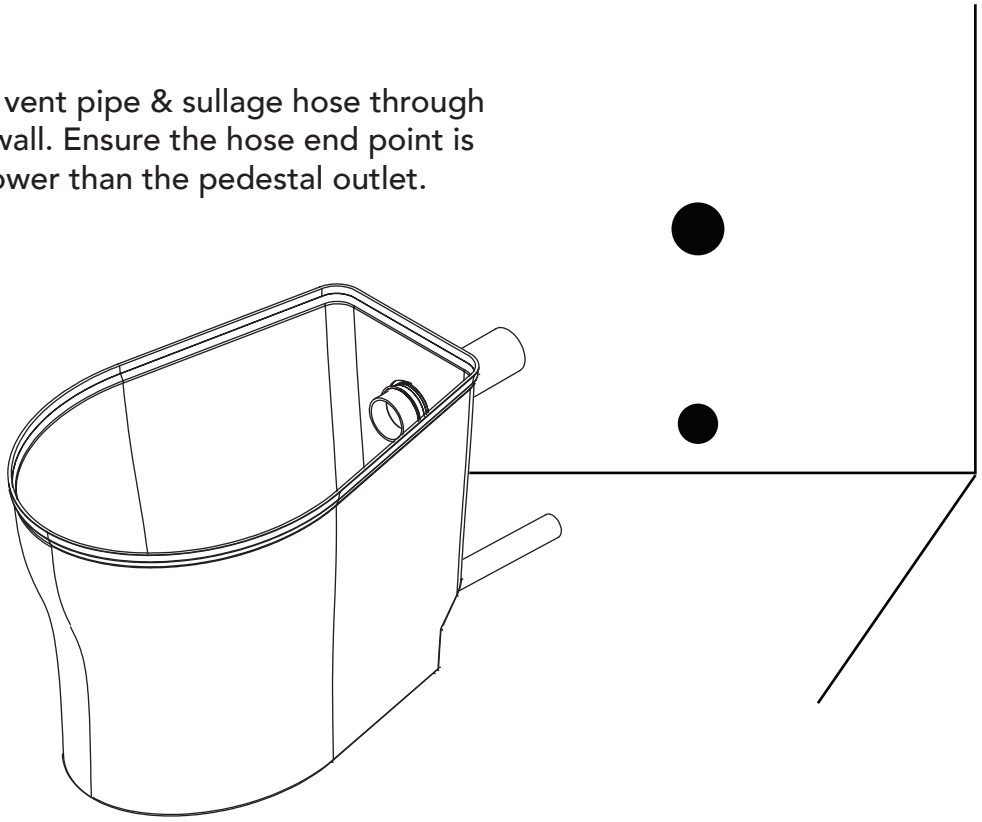
SIDE VIEW

3



4

Feed vent pipe & sullage hose through the wall. Ensure the hose end point is lower than the pedestal outlet.



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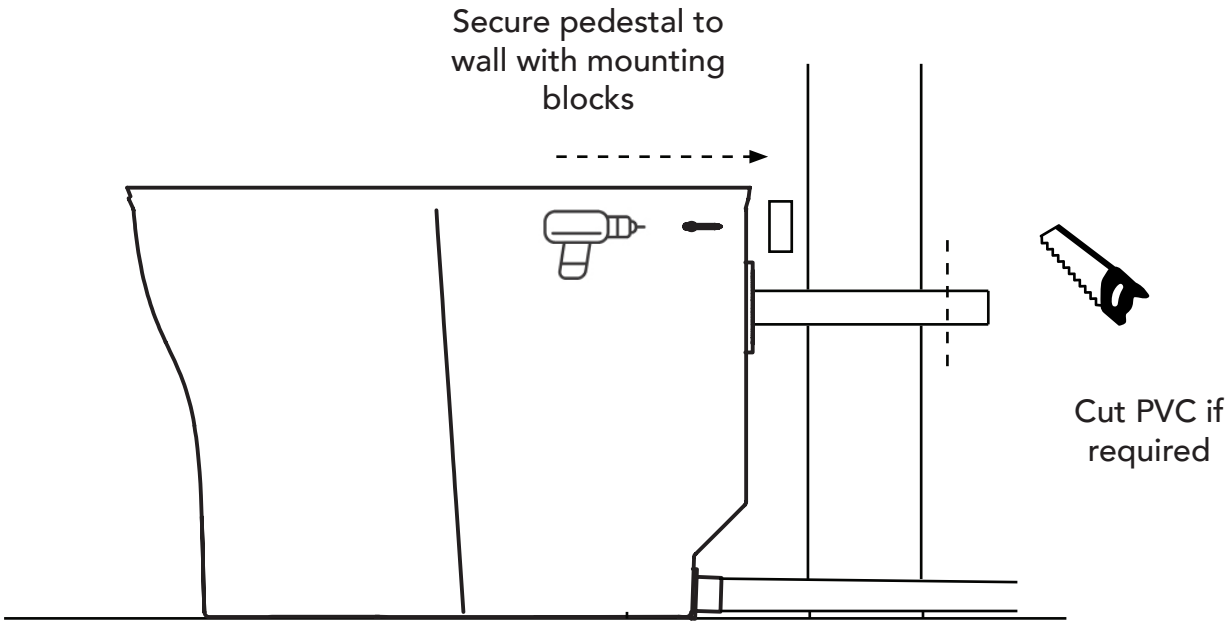
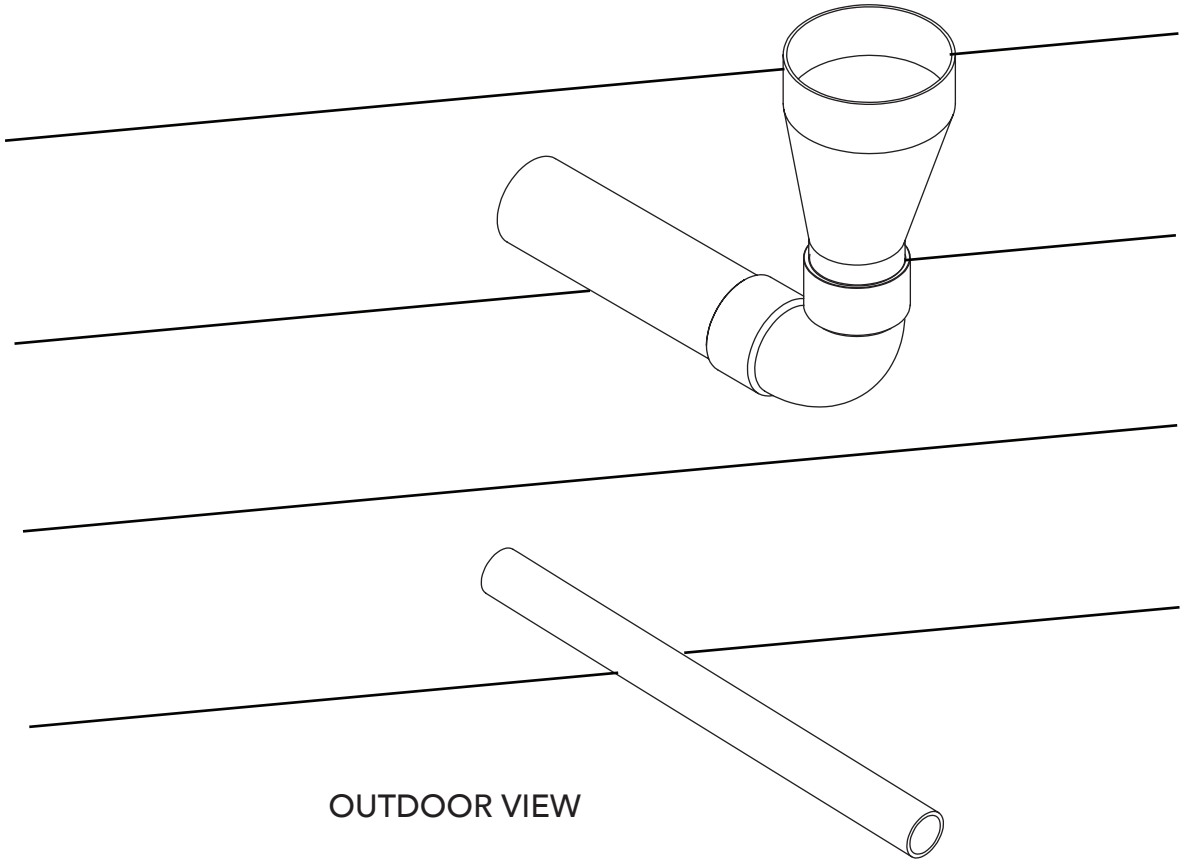


6

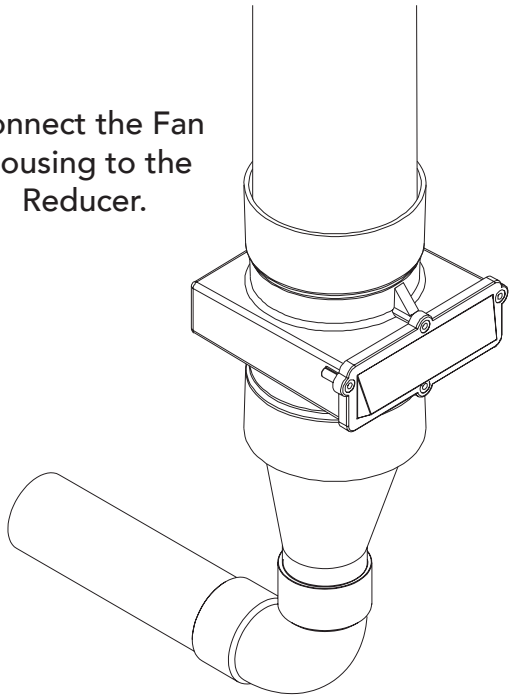
Connect the 90° DWV Bend and the Reducer to the DWV Pipe.



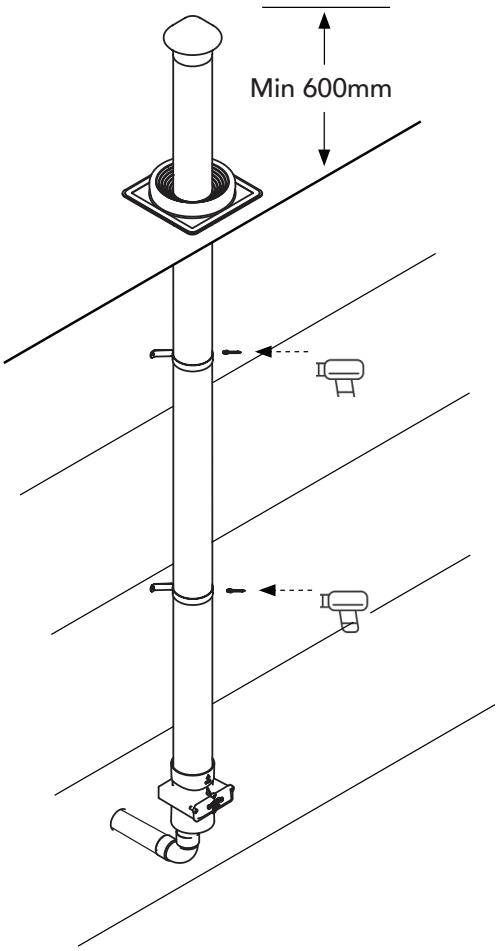
OUTDOOR VIEW

7

Connect the Fan Housing to the Reducer.

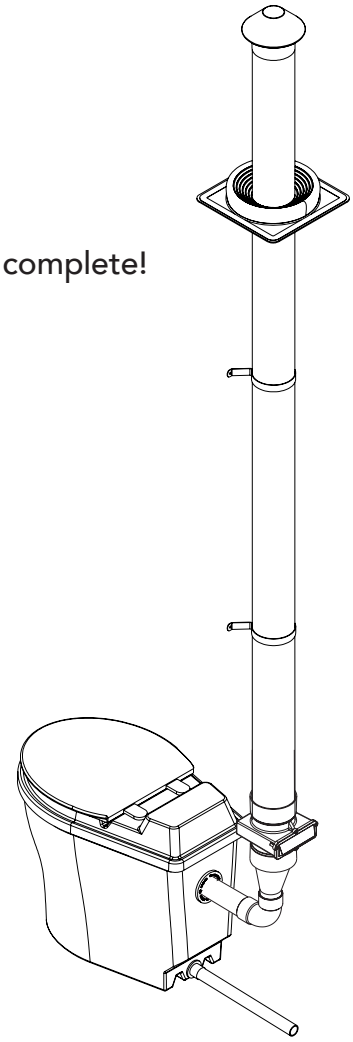


8



9

Installation complete!

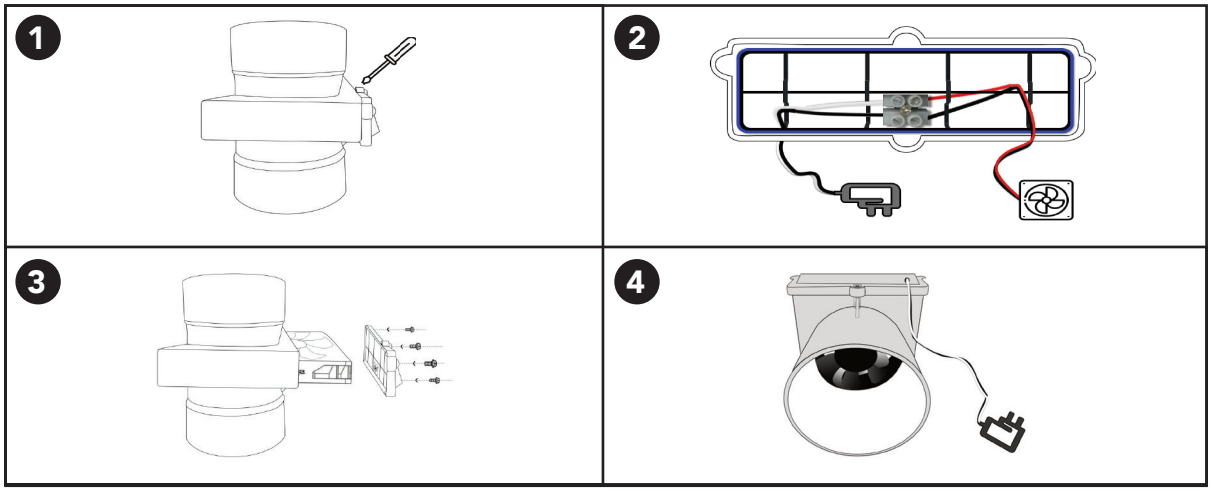


POWERING THE FAN

Mains Power

A 240/12 volt regulated transformer is included to run the fan from mains power. The positive wire on the transformer is marked with a white line. The fan has anti-polarity protection and would not run if connected incorrectly.

Connect the fans to the transformer as follows:



Solar Power

If no 240V power socket is available, the fan can be connected to alternative power sources such as a solar power system. Solar kits are available from Ecoflo. The fans are rated for voltages between 8 and 12V DC. For instructions on how to connect the fan to the solar power system, read the seperate Solar Panel Installation Manual.

NOTE: The fan should run 24 hours a day to continuously circulate air through the compost heap. Air is drawn down the toilet pedestal, through the compost chamber and out the vent pipe.

EXCESS LIQUID DRAIN

The drainage system to be chosen depends entirely on the soil condition, ground water level, and local regulations. Please ensure you choose your location with this in mind.

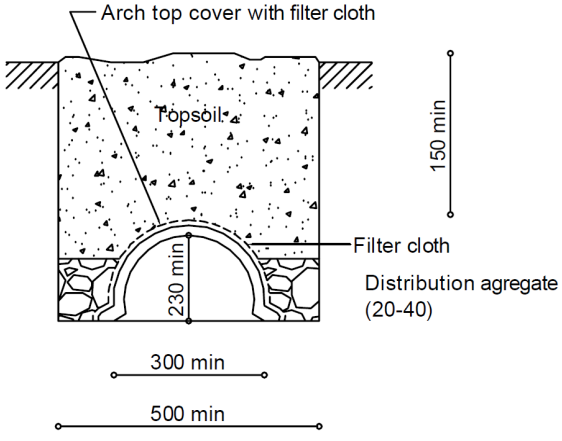
ABSORPTION TRENCH INSTALLATION

This is the normal method for disposal of excess liquid, but refer to council for permit for any specific requirements. These instructions apply to installation of the drain kit items available from Ecoflo.

1. Dig a trench in a position located in front of the liquid end product drain.
2. The trench is to be located in soil of good permeability and in a position where ground water will not flood the unit.
3. If there is some doubt as to the permeability of soil, extra trenching length may be required especially if a hand basin or other fittings will also drain into the same trench.
4. The liquid leaving the compost unit when in use is not expected to exceed 1 litre per day per resident.
5. In some locations it may be desirable or necessary to connect the excess liquid drain to a grey water system or an alternative disposal method complying with AS/NZS 1547:2012.
6. Trench dimensions and construction are to be in accordance with AS/NZS 1547:2012, as shown in Figure 5.

It is important to ensure that the trench is level along its length. Ensure the liquid drain pipe slopes away from the toilet and towards the trench. The trench should be protected from surface water, flooding, and vehicle traffic.

Figure 5: Durable Self Supporting Arch Trench (all dimensions in mm)



USING THE NL2

INITIAL SETUP

1. Once the pedestal has been installed, place one compost chamber inside the pedestal.
2. Remove the chamber lid and put back the pedestal lid. Do not misplace the chamber lid and make sure it is kept somewhere safe.
3. Connect the power outlet for the ventilation fan to power source.
4. Add 5 litres of bulking agent into the composting chamber.
5. NL2 is ready to be used!

MAINTENANCE

GENERAL CARE

The NL2 should be examined regularly to ensure correct operation. The key areas to be checked are listed below:

- Check ventilation fan is running.
- Check there is no excess liquid in the compost chamber and pedestal. Refer to Section 7.0 for troubleshooting.

REMOVING THE CHAMBER

The active compost chamber should be replaced with an empty one when it is approximately 75% full or when the pile is approximately 200 mm from top of the toilet seat.

1. Remove the pedestal lid and place the chamber lid on.
2. Swing the handle upright and lift the chamber out from the pedestal. When lifting the chamber, please be cautious incase of droplets from the chamber floor holes.
3. Place the chamber outside for secondary composting. The chamber should be placed in a warm sunny position (where direct access is restricted).
4. Put the empty second chamber into the pedestal. Remove the chamber lid and keep it in a safe place.
5. Add bulking agent and microbes.
6. Replace the pedestal lid.
7. NL2 is ready to be used again.

WHEN DO I EMPTY THE SECONDARY CHAMBER

As a general rule, you should leave the material in the compost chamber as long as possible. The NL2 has been designed for 2 people full time where the average monthly temperature is greater than 18°C in any given month.

Compost temperature is a significant factor in the time required for the composting process. The higher the temperature (within the optimum range), the faster the compost process. As a reference, 50 days is required to reach 50% (half life) decomposition with a compost temperature ranging between 22-24°C.

When ready for disposal the composted materials should have no offensive odours immediately after removing the chamber lid (at this stage this should resemble regular potting mix).

If there is more than 2 people using the toilet or you are in a colder area then additional compost chambers may be required. Additional compost chambers can be purchased from Ecoflo WM.

HOW DO I DISPOSE THE COMPOSTED MATERIAL?

Ecoflo WM recommends wearing protective clothing whenever handling waste products. Recommended protective clothing includes gloves, appropriate footwear, a face mask and ideally eye protection.

You should dispose of the composted waste in accordance with any and all local authority regulations. All composted product should be handled and treated with caution as there is a risk of exposure to pathogens particularly if the product is not properly composted.

For an on-site burial of composted end product, it should be undertaken in a location where direct access by humans and animals is restricted. It should be buried with a minimum cover of 100mm within soil that is not intended for the cultivation of root vegetables or nearby a water catchment area.

ADDING BULKING MATERIAL

It is important to place bulking material into your toilet, we suggest 1 cup per day directly into the compost chamber. This amount is based on two people using the system full time.

In times of heavy use, if the liquid is not draining well through the compost or if the compost appears too dry, we suggest mixing the additional bulking agent through the compost pile. By mixing the solid waste, paper and bulking material, the compost will be kept porous and moist and the supply of oxygen will increase, which substantially speeds up the transformation of waste materials into humus.

Bulking material: Hemp, wood shavings or other carbon rich fibrous material. (Sawdust is not recommended)

CLEANING

Use mild detergents on your NL2. Never use scouring powder or other strong detergents that could scratch the surface, or kill off your good bacteria. We recommend green friendly or septic safe products.

WARNING

Never put cigarettes or other burning meterial, or any sanitary products into your toilet.

HOW COMPOSTING WORKS

GENERAL

Composting involves the biological decomposition of organic matter using natural occurring organisms such as bacteria, fungi and other micro-organisms into compost which is a humus-like product.

The composting process can be aerobic or anaerobic however aerobic decomposition is desirable because it is efficient and does not produce unpleasant odours. Composting in a Nature Loo system is effectively aerobic however there may be anaerobic decomposition within small pockets within the compost pile.

The composting process involves four main components: microbes (including bacteria, fungi and protozoa), organic matter, water and oxygen. The carbon compounds present in the organic materials are used by the micro-organisms as an energy source and transformed into carbon dioxide. As the carbon dioxide and water vapor is released into the environment the compost pile becomes smaller.

Nitrogen is also a crucial element in the composting process which is required by the microbes for cell growth. For optimal decomposition the ratio of carbon to Nitrogen should be around 30:1. Urine and human feces are relatively high in Nitrogen and therefore additional carbon is required for optimal composting.

MOISTURE

In optimum conditions, the compost material has the consistency of potting mix with approximately 35% to 65% moisture content.

When below 35%, there is not sufficient moisture for the micro-organisms to function and when above 70%, saturated conditions begin to develop and a lack of oxygen supply becomes a limiting factor. Under these condition the process becomes anaerobic and odorous gases such as methane and hydrogen sulphide are released.

TEMPERATURE

The optimum temperature range for most compost toilets is 18°C to 45°C. Lower temperatures result in a mouldering process that takes a significantly longer period of time to compost. Additional chambers may be required in this instance.

AERATION

The aerobic organisms responsible for the composting process require oxygen to survive. Without oxygen, they will die and be replaced by anaerobic micro-organisms that will slow the composting process and generate odour. For compost toilets to work effectively, the material being composted should be unsaturated and have a loose texture to allow air to circulate freely within the pile.

PATHOGENS

Pathogens are eliminated through the long retention time within the compost, the temperature of the compost and the activity of the micro-organisms.

WARRANTY

Pedestal

- 10 years warranty.
- Any damage caused by exceeding the maximum recommended weight listed in specifications will/may void your warranty.

Chamber Screen

- 2 years warranty.

Ventilation Fan

- 12 months limited warranty.
- Powering the fan with an unregulated power source exceeding 12V or using power supply not recommended by Ecoflo will/may void your warranty.
- Any faulty fan during the warranty period should be returned to Ecoflo WM before a replacement can be provided.

All other components come with a standard 12 month warranty.

TROUBLESHOOTING

WHY IS THE COMPOST CHAMBER FILLING TOO QUICKLY?

This can be caused by ineffective composting processes due to a number of issues as listed below:

Compost pile being too wet

This means liquid is trapped in the compost chamber contributing to build-up. Check if the drainage outlet is being blocked. If drainage outlet is okay, this could be caused by prohibited solids blocking the perforated holes in the floor of the compost chamber.

Insufficient air flow

Without sufficient air flow, the evaporation process will be slowed and odours may start to escape into the toilet room. This can be caused by a malfunctioning fan or the ventilation system has been blocked. Check if the fan is properly connected or replace the fan if broken. Check if the insect netting has been blocked.

WHY IS THE COMPOSTING PROCESS SLOW TO COMPLETE?

The composting process is dependent on temperature and humidity.

Is your compost pile too wet?

The addition of bulking agent is an imperative part of the operation of a composting toilet. Bulking agent will assist with the absorption of liquid in your composting toilet and will aid in improving the carbon/nitrogen ratio (important for composting) and will allow air to flow more freely through the system as it loosens the compost pile.

Is your compost pile surrounding temperature too low?

In cool climates do not insulate the toilet; turn down the fan voltage to lessen cool air being drawn into the system. If odour occurs due to the fan voltage being turned down, simply turn it up slightly to increase airflow.

When taking the compost chamber out for secondary composting, make sure it is located in a warm spot preferably in direct sunlight.

How to deal with insects attracted to compost pile?

To break the breeding cycle of insects (most commonly vinegar flies) spray the compost pile with pyrethrum based insect spray for 7 consecutive days (ensure the fan is turned off while spraying). Always place a layer of bulking agent over the top of the pile in the out of service chamber to eliminate the possibility of insects laying eggs.

CONTACT US

We are available from 8am to 5pm, Monday to Friday (excluding public holidays).

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