



# MAXI 15

**Environmental Sewage Systems**

# ECO-SEPTIC MAXI 15 DESIGN CALCULATIONS

## PROPOSED INFLUENT QUANTITIES/QUALITIES AVERAGE

**FLOW RATE: 2250 litres per day**

**MAXIMUM FLOW RATE: 4000 litres per day**

150 litres per person per day average

$$15 \times 150 = 2250$$

Average daily flow rate of 2250 litres Maximum: 266 litres per person

$$15 \times 266 = 3990 \text{ litres/day}$$

<b>BOD<sub>5</sub></b>	150 – 300 mg/L
<b>SS</b>	150 – 300 mg/L
<b>Total Nitrogen Total</b>	20 – 100 mg/L
<b>Phosphorous</b>	10 - 25 mg/L

## PROPOSED EFFLUENT QUALITY

<b>BOD<sub>5</sub></b>	<20 mg/L
<b>SS</b>	<30 mg /L
<b>Free Chlorine</b>	>0.2 & <2.0 mg/L
<b>Thermotolerant Coliforms</b>	<30 cfu/100ml

## SEPTIC SECTION: 3800 LITRES

1550 sludge allowance + (150 x N)

N = Number of persons

1550 + (150 x 15)

1550 + 2250

3800 litres capacity

## AERATION:

**VOLUME:** 250 litres per person

250 x 15

3750 litres

**AIR SUPPLY:** 200 litres per minute

8 litres per person per minute

8 x 15

120 litres per minute 7200 litres/hour

**DIFFUSERS:** 4 x 500 mm diffusers

2000 mm

**GROWTH MEDIA:**

5 square metres per person  
5 x 15 = 75 square metres

**SUPPLIED 160 SQUARE METRES**

**CLARIFIER:**

0.42M<sup>2</sup> / 500 litres capacity

**CHLORINATION:**

Twin Chlorine Bath  
200 gram trichlor tablets

**CHLORINE DETENTION:**

Half hour detention time  
2250 litres /10 hours  
225 / hour  
112.5 litres

**SUPPLIED 500 LITRES**

**IRRIGATION:**

As per site evaluation report

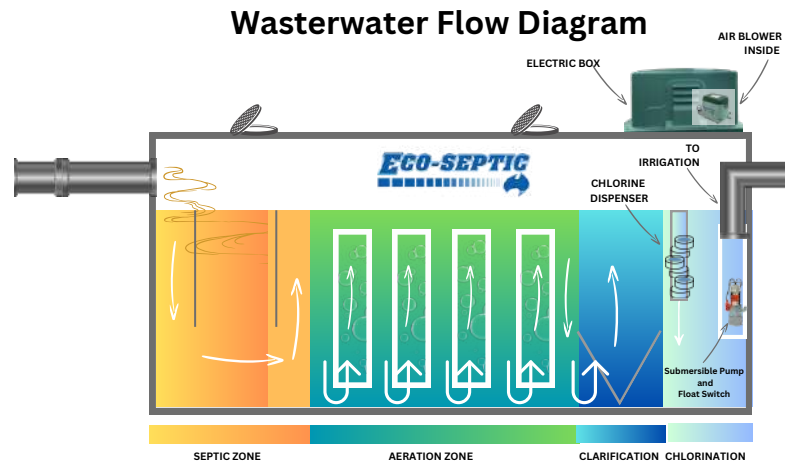
## ECO- SEPTIC MAXI 15 SPECIFICATIONS

Description	Specification
Number of persons	15 EP
Tanks	2 x 4500 litre ECO-SEPTIC Tanks
Blower	200 litres per minute
Irrigation Pump	As per irrigation requirements
Septic Section	4500 litre tanks with baffle at 2/3 – 1/3 position
Aeration Section	3750 litres of aeration divided into two sections
Chlorine Contact & Pump-Out Tank	330 litres. Tank with internal pump out section
Media	75m <sup>2</sup> (6 packs x 500 x 500 x 800mm) Aqua Cool CF1900
Diffusers	4 x 500mm
Chlorinator	2 Chlorine canister

## TECHNICAL PROCESS DESCRIPTION

This is a general breakdown of our wastewater treatment unit.

The wastewater unit works on the combined principles of primary settling plus aerobic and tertiary treatment.



As you can see in the above diagram all your household wastewater and effluent enters the tank through the inlet shown here on the left side of tank.

This settles into the septic zone (identified by the orange & yellow shaded area).

Towards the top of the baffle wall which separates the septic and aeration compartments, there is an outlet which enables the effluent to trickle into the aeration / treatment zone. The aeration / treatment zone is the blue shaded area of the diagram.

From this, the effluent is filtered over a mass of growth media plates. The growth media acts as a bacteria-breeding ground, which sounds quite nasty but is actually a very important and proficient function of the wastewater unit.

The growth media (illustrated as the grey checked areas) enables the bacteria to break down.

Once the organic impurities have been absorbed within the aerobic culture of microorganisms, the water passes to the clarification zone. At this stage the water has been recycled into clean, clear, odorless water.

The clarification zone is the secondary sedimentation process.

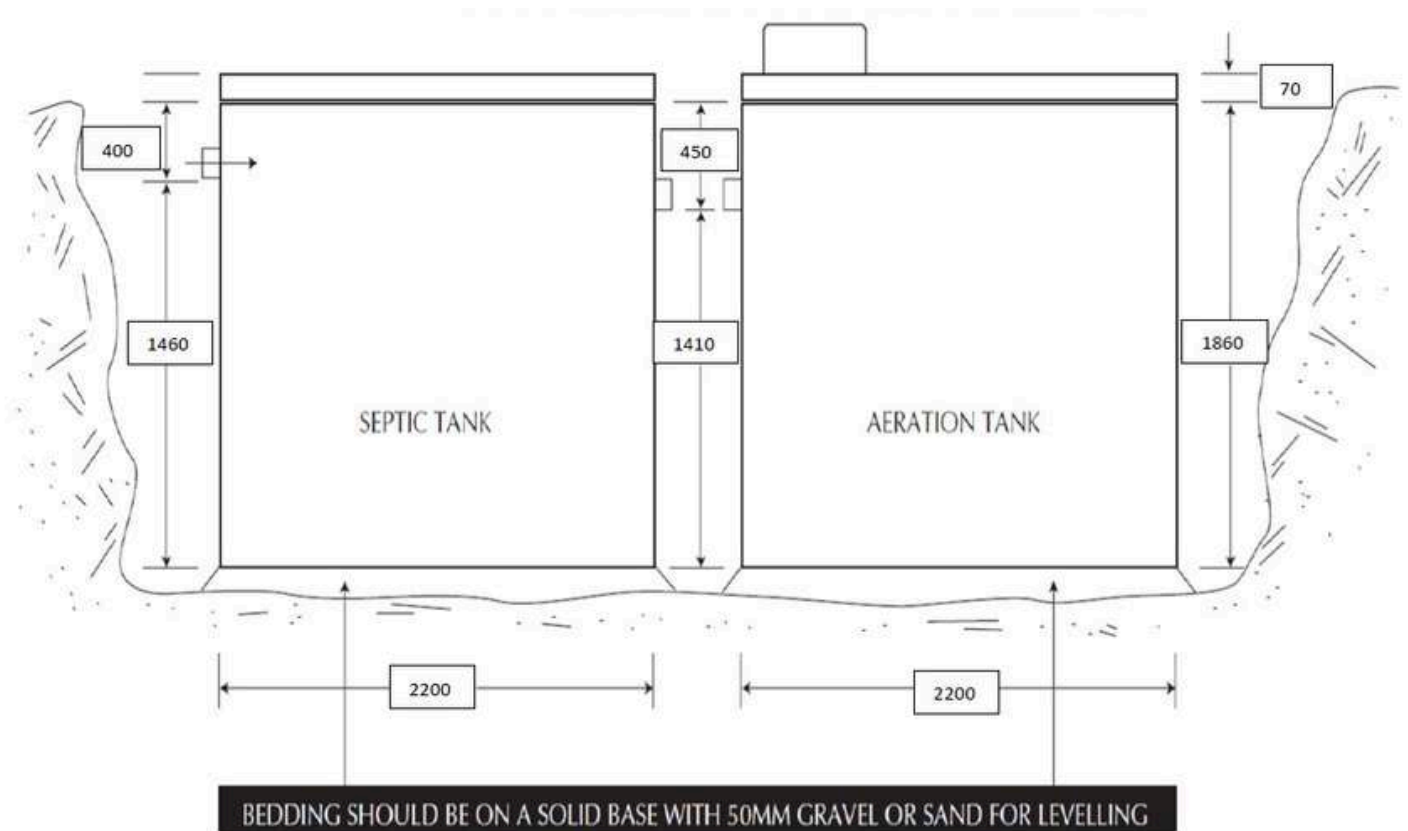
Before the water is released from the tank it is circulated through the chlorinator. The chlorinator is as the name suggests – a chlorine based chamber that acts as a final back up and safeguard to catch and kill any nasties that may have escaped through the aeration and clarification processes.

## MAXI 15 EXCAVATION DRAWINGS

The wastewater units come in your choice of either a one or two tank concrete constructed unit.

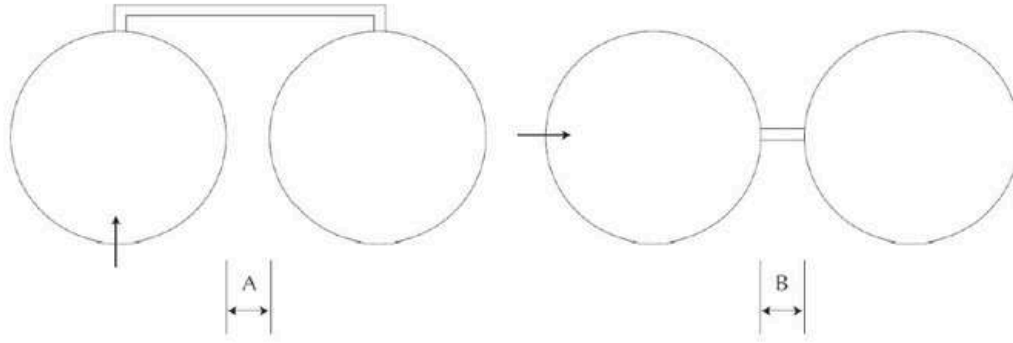
The Maxi 15 two tank system, separates the septic zone into one 4500 litre tank and the aeration, clarification and chlorinator into another 4800 litre tank.

The ECO-SEPTIC Maxi 15 is a 15 person capacity treatment system.





# Excavation Dimensions – Maxi 15



ALL PIPE WORK MUST BE SECURELY SUPPORTED

## PREFERRED MINIMUM SPACINGS

A	75mm MIN
B	300mm MAX

NOTE: Ensure pipe inverts are correct  
Tank risers come in 300mm & 600mm

PLEASE NOTE: Please ensure that a minimum of 50mm of tank plus lids is above ground.

# Drawings – Maxi 15

