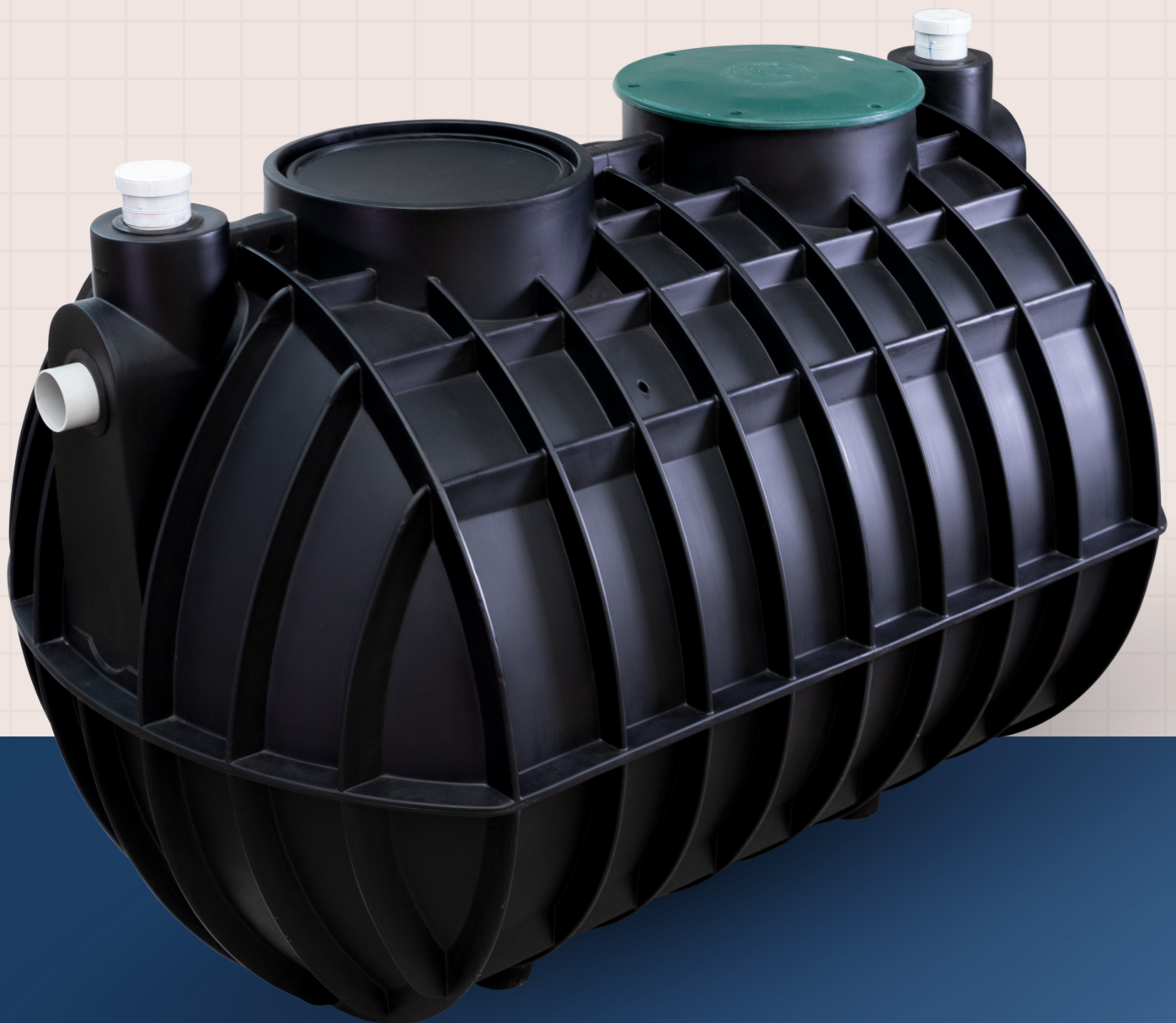


# Septic Tanks

Installation, Operation &  
Maintenance Manual



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Polymaster

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## ABOUT THIS PRODUCT

Polymaster Septic Tanks are purpose-built underground wastewater systems designed for on-site treatment and disposal of sewage where centralised sewerage is impractical or unavailable. Using a biological treatment process, the tank harnesses natural bacteria to break down waste, with treated effluent released through a subsurface drainfield network into surrounding soil.

Available in two capacities – ST3100 (3,100L) and ST4550 (4,550L) – with the inlet, outlet and internal baffle pre-installed at the factory for fast on-site connection. The low-profile design minimises excavation depth, and an engineered self-anchoring rib profile resists flotation in high water table conditions. Tanks are Australian made and manufactured to AS/NZS 1546.1:2008.

By following the installation requirements in this manual, this product will give you many years of trouble-free service. This manual should be read in conjunction with any product-specific documentation supplied with the tank.

**CORRECT TANK INSTALLATION IS THE SOLE RESPONSIBILITY OF THE PURCHASER.**

### KEY FEATURES:

- One-piece rotationally moulded polyethylene construction – no welds, seams or joints to fail
- Biological treatment process – uses natural bacteria to break down waste
- Pre-installed 100mm inlet, outlet and internal baffle for fast on-site connection
- Self-anchoring rib design resists flotation without concrete ballast in most conditions
- Low-profile design minimises excavation depth
- Subsurface drainfield system for treated effluent dispersal
- Access hole with tamper-proof lid for inspection and maintenance
- Riser-compatible for flush-to-grade access
- Manufactured to AS/NZS 1546.1:2008

## MATERIALS USED IN CONSTRUCTION:

- PE – Polyethylene (tank body), UV-stabilised, engineered specifically for rotational moulding
- Engineered using finite element analysis (FEA) to ensure structural integrity under burial loads
- Chemically inert – resistant to the H<sub>2</sub>S (hydrogen sulfide) attack that causes corrosion in concrete tanks
- Complies with all requirements of AS/NZS 1546.1:2008 for the construction of septic tanks

## AUSTRALIAN STANDARDS

- Polymaster is certified to ISO 9001:2015 International Standards and undertakes regular audits from third-party auditors.
- Polymaster Septic Tanks are manufactured to AS/NZS 1546.1:2008 – BSI Benchmark certified (Licence BMP 657673) – for the construction of on-site domestic wastewater treatment systems.
- Tanks are designed using engineering methods including finite element analysis (FEA).
- Every tank is labelled with full manufacturing details, including a serial number, for complete traceability.



PRODUCT CERTIFICATION



BSI Certified Product  
AS/NZS 1546.1:2008 Lic:BMP No 657673  
Australian/New Zealand Standards

## GENERAL HEALTH & SAFETY

Read this manual carefully before installation and use. Pay attention to all safety warnings. This manual should be kept with the equipment at all times.

- This manual contains important information concerning the safe installation and use of this product. Read the manual carefully before installation and use, paying attention to all safety warnings.
- Installation and use of this product should only be carried out by a qualified plumber or properly trained and approved personnel.
- Users of this product are responsible for the safe and correct use of this product.
- Any changes to this product made without consulting the manufacturer will invalidate all warranties and guarantees.
- The manufacturer will not be responsible for any accidents or damages caused by incorrect installation or use of this product.
- When lifting the tank into place, use the appropriate lifting lugs and lower evenly into the hole. Do not manhandle the tank into place or attempt to lift manually – injury could occur.
- Once installed, never leave the tamper-proof lid off the tank. This is a serious hazard to young children, personnel and animals, and could result in death by drowning.
- All Worksafe regulations and safe work procedures should be adhered to when installing your septic tank.
- If the tank needs to be entered, ensure proper confined space procedures are adhered to and adequate ventilation equipment is provided.

**IMPORTANT: It is the responsibility of the owner to ensure proper installation and maintenance of the underground tank. Polymaster will not be held responsible for any loss, injury or death resulting from a failure to observe all safety and installation requirements or safe working procedures.**

## HOW YOUR SEPTIC SYSTEM WORKS

Septic systems are on-site individual wastewater systems that use the soil to absorb and naturally treat wastewater flows. They are typically used where centralised sewerage treatment is impractical or not available.

A septic system uses bacteria to break down waste. It is therefore important that you do not use cleaning products or dispose of any substance down the drainage system that will kill the bacteria essential to its operation.

### ITEMS TO AVOID INTRODUCING TO THE SYSTEM

- Products that contain chlorine or ammonia
- Fats and greases
- Non-degradables such as disposable nappies, sanitary napkins, cat litter, and plastics
- Poisons such as petrol, paint, thinners, and pesticides
- Excessive food scraps

There is a range of biological cleaning products made specifically for use with septic tank systems. These should be used in place of standard cleaning products wherever possible.

### WATER USAGE

Remember – less water used means less water to be treated and disposed of. Spread laundry loads evenly across the week rather than completing all washing in a single day.

# SELECTING A SAFE LOCATION

## GENERAL LOCATION

There are many aspects to consider when selecting the best location for your tank. Some points to consider:

- Contact relevant authorities before digging to locate all underground cables and pipes.
- Determine the best location of the tank taking into account existing underground services, excavation required, location of blackwater run, heights into tank, and outlet fall to drain.
- Ensure the tank excavation hole is far enough away not to impact on foundations and adjoining structures. Where no regulations exist, the distance of the excavation from any structure should be a minimum of 2 times the depth of the excavation.
- Consult with a Geotechnical Engineer if you have any questions about the possible influence of excavation on surrounding structures.
- Must not be installed where there is a possibility of the water table exceeding half the height of the tank.

## REGULATIONS

There may be local, state or national regulations that apply to your proposed tank installation. Check with the relevant authorities concerned to ensure all requirements are complied with. A thorough evaluation of the proposed site is recommended prior to any placement or installation works being carried out.

## BELOW GROUND

These tanks are specifically designed for below-ground installation and must not be used above ground. Ensure the installation depth complies with the minimum requirements outlined in the Excavation section.

**WARNING: Failure to comply with these precautions and instructions can result in serious property damage, injury or death and reduce the tank's performance and longevity.**

# EXCAVATION

- Excavate hole according to the dimensions of the tank.
- Excavation slopes should be at a minimum of 30 degrees.
- Hole depth should be a minimum of 1675mm below finished pavement or lawn level.
- Remove all loose soil from the base of the hole and add 100mm of sand or crusher dust, compacted to a firm level pad.
- Be aware of safe working practices for working in excavated holes.
- Hole dimensions at the base should be a minimum of 200mm larger in both width and length than the tank dimensions.

## BACKFILL MATERIAL:

Use cohesionless material such as sand, crusher dust, or 6mm FCR as backfill material in the effective zone. The material should be a minimum density of 18 kN/m<sup>3</sup> and a maximum density of 20 kN/m<sup>3</sup>.

## TRANSPORT, HANDLING & POSITIONING

### DO NOT TRANSPORT WITH LIQUID INSIDE THE TANK.

The Septic Tank must be protected against mechanical damage during transport and storage.

Loading and off-loading must be carried out using only professional equipment – for example, a backhoe or excavator with capacity rated to the tank weight. Use the top lifting points for stability when lifting the tank into place. Do not manhandle or manually lift the tank.

- The tank has 4 integral feet for stability, but extra chocking may be necessary depending on ground conditions.
- Use the access hole as a guide and level the tank in both directions once positioned.
- The tank must never be pushed, pulled, dragged or rolled.
- During transportation, the tank must be secured to prevent movement.
- Loading and transport areas must be smooth and free of sharp edges.

## INSTALLATION & BACKFILLING

Prior to installing, inspect for damage. If damaged, do not install.

### BACKFILLING

- Before commencing backfill, fill the tank with water up to the half-way mark.
- The backfill material around the tank must be compacted in layers not exceeding 200mm. Use only hand-held vibrating plate compactors in the compaction process.
- Use cohesionless material such as sand, crusher dust, or 6mm FCR in the effective zone. Minimum density 18 kN/m<sup>3</sup>, maximum density 20 kN/m<sup>3</sup>.

## TANK LIFTING POINTS

In the event of tank relocation, lifting should be performed using the labelled lifting lugs only. Do not lift the tank using any of the installed fittings. The tank must be empty when lifted. Contact Polymaster for appropriate lifting plans for your tank type.

## FINAL HOOKUP

Ensure all caps and overflows are sealed prior to backfilling the excavation and check all connections.

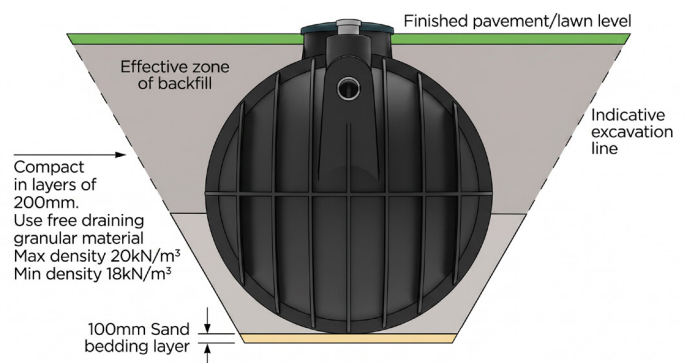
Apply a 20mm silicone bead around the groove in the top of the access hole and fasten the lid down with steel tamper-proof screws.

If a riser is to be used, fasten it from the inside using silicone and the 6 stainless steel tamper-proof tek screws supplied that originally secured the lid to the septic tank.

### PIPING AND CONNECTIONS:

All hoses, piping and connections must be adequately supported independently of the tank. Confirm compatibility of all associated fittings with the application. Label the tank with appropriate identification. Ensure the tank system is adequately vented to prevent pressure or vacuum build-up.

**WARNING: Failure to support and protect connections and to provide proper foundations for the tank could cause system failure resulting in serious injury and/or property damage.**



## SERVICE & MAINTENANCE

Regular routine visual inspections of your septic tank are important to ensure safety of personnel and continued system performance. Any sign of stress cracking, excessive surface degradation, or other signs of failure should be immediately reported and a full inspection carried out.

- Plan and initiate a maintenance regime for the tank system. Aim to keep all system equipment in good working condition.
- Any faults or alarms should be reported to the responsible person immediately.
- Protect against unauthorised access.
- Carry out regular visual checks of the tank and ancillary equipment. Any leaks are to be promptly recorded, reported, and repaired by a qualified service engineer or technician.
- Ensure that substances not intended for the system are prevented from entering at any time.

## GROUND MAINTENANCE

Septic systems have a network of drainage pipes that allow wastewater to seep into the subsurface soil. The area over the drainfield should be left undisturbed with only a mowed grass cover. Divert excessive ground and stormwater away from this area. Be aware that roots from nearby trees or shrubs may clog and damage drain lines. Do not allow anyone to drive or park over any part of the drainage system.

## DESLUDGING

Septic systems will over time build up an excess of accumulated solids that must be pumped out every 3–5 years. This depends on the volume put through the tank and varies greatly between applications.

- Have the tank pumped out by a licensed liquid waste contractor.
- Consult your local council about any applicable EPA regulations.
- Always leave a small volume of effluent in the tank after desludging to ensure the tank does not float up or become dislodged. Bacteria levels in the tank will restore once wastewater re-enters the system.

## INTERNAL INSPECTION

**WARNING:** Never allow anyone at any time to enter the septic tank once it is operating. It is a confined space and an extreme health risk. If entry is required, ensure proper confined space procedures are adhered to, relevant permits are obtained, and adequate ventilation equipment is provided.

## EXTERNAL INSPECTION

Thoroughly inspect accessible components of the tank and examine for any cracking or excessive surface degradation. Check all pipe connections and fittings for signs of leakage or corrosion. Inspect vents for free flow to ensure adequate pressure relief.

For more information about maintenance or inspection, contact the plumber who installed your tank or your local council.

# RECOMMENDED CARE INSTRUCTIONS

| ITEM/AREA OF INTEREST                   | ACTION RECOMMENDED  | FREQUENCY                   |
|---|---|-----------------------------|
| <b>Septic Tank</b>                      | Refer to the Septic Tank Care Instructions and Troubleshooting Guide for details on care of the tank.   | See Troubleshooting section |
| <b>Visual Inspection</b>                | Visually inspect the entire unit for any changes in condition. Check for swelling, cracking, or deformation of tank walls.                    | 1 Month                     |
| <b>Location</b>                         | Confirm the installation environment matches the original installation. Review changes for any influence on safe operation.                   | As Used / 12 Months         |
| <b>Ground / Drainfield</b>              | Keep the drainfield area undisturbed with mowed grass only. Divert stormwater away. Check for tree root intrusion near drain lines.           | 3 Months                    |
| <b>Cleaning</b>                         | Clean accessible external surfaces with soapy water and cloths to remove any buildup of dust, dirt, or debris.                                | 3 Months                    |
| <b>Chemical Compatibility</b>           | Confirm that cleaning products and substances used are compatible with the septic system. Avoid chlorine, ammonia, fats, and non-degradables. | As Used / 3 Months          |
| <b>Lid &amp; Tamper-Proof Fasteners</b> | Check that the tamper-proof lid is securely fastened and in good condition. Never leave the lid off the tank.                                 | 3 Months                    |
| <b>Hose &amp; Pipe</b>                  | Check the condition of inlet and outlet connections. Ensure there are no blockages, kinks, or deterioration of the material.                  | As Used / 3 Months          |
| <b>Vent</b>                             | Check and clean around vents regularly to remove any buildup of dust or dirt. Ensure nothing is impeding vent operation.                      | 3 Months                    |
| <b>Seals &amp; Connections</b>          | Visually inspect all accessible fittings and connections for any changes or leaks. Drain and service if any change is noted.                  | As Used / 3 Months          |
| <b>Foundation / Base</b>                | Check the tank surrounds for any erosion, subsidence, or surface damage above the buried area. Repair as required.                            | 3 Months                    |
| <b>Desludging</b>                       | Have accumulated solids pumped out by a licensed liquid waste contractor.   | 3-5 Years                   |

# TROUBLESHOOTING

| TOPIC                                  | POSSIBLE CAUSE                           | ACTION   | CONTACT                                  |
|--|--|--|--|
| <b>Odours from system</b>              | New system – bacteria establishing       | Allow system to settle. Odours typically resolve within a few weeks of operation.                    | Not Required                             |
| <b>Odours from system</b>              | Chemical use killing bacteria            | Review cleaning products used. Switch to septic-safe biological cleaners.                            | Not Required                             |
| <b>Odours from system</b>              | Excessive laundry loads                  | Spread laundry loads evenly across the week to avoid overloading the system.                         | Not Required                             |
| <b>Odours from system</b>              | System overloaded or partially blocked   | Reduce water usage. Have system inspected by a qualified plumber.                                    | Contact licensed plumber                 |
| <b>Slow drainage / blockage</b>        | Tree root intrusion into drainfield      | Have drain lines inspected and cleared. Review nearby vegetation and remove if necessary.            | Contact licensed plumber                 |
| <b>Slow drainage / blockage</b>        | Accumulated solids – desludging required | Arrange for a licensed liquid waste contractor to pump out the tank.                                 | Contact licensed contractor              |
| <b>Effluent surfacing above ground</b> | Drainfield saturated or blocked          | Reduce water usage immediately. Have system inspected by a qualified plumber or local council.       | Contact licensed plumber / local council |
| <b>Effluent surfacing above ground</b> | High water table                         | Review site conditions against original installation requirements.                                   | Contact Polymaster / local council       |
| <b>Lid not seating correctly</b>       | Tank has shifted or is not level         | Check tank level and re-seat lid as required. Review base condition for subsidence.                  | Contact Polymaster if damage present     |
| <b>Lid not seating correctly</b>       | Damaged or warped lid                    | Inspect for damage. Replace lid if required.   | Contact Polymaster                       |
| <b>Tank movement after desludging</b>  | Residual effluent not left in tank       | Re-seat tank if dislodged. Always leave small volume of effluent after pumping to prevent flotation. | Contact licensed contractor              |

## WARRANTY

Polymaster products are guaranteed against material or manufacturing defect. Warranty periods commence from the date of invoice:

| Item                     | Warranty  |
|--------------------------|-----------|
| Polyethylene septic tank | 10 years  |
| Accessories / components | 12 months |

This warranty exceeds the 7-year Building Industry Guarantee on a new home and meets accreditation guidelines guaranteeing a service life of 15 years.

### WARRANTY CONDITIONS:

- Equipment is installed and commissioned in accordance with this manual.
- Equipment is installed and commissioned by a suitably qualified plumber or engineer.
- Equipment has not been subject to misuse, careless handling, faulty installation, or repairs by unauthorised personnel.
- Equipment has been purchased by the end user and is not for hire purposes.
- The tank is installed below ground in strict accordance with the excavation and backfilling requirements in this manual.
- All installation instructions are strictly adhered to.
- The tank is inspected regularly and maintained in line with this guide.

### WARRANTY EXCLUSIONS:

- Mechanical damage caused by the user, dealer, or improper maintenance.
- Faults, damage, or premature wear caused by improper use.
- Damage caused by third parties.
- Repairs carried out by unauthorised service personnel.
- Ancillary fittings such as pumps or sensors (refer to respective manuals).
- Damage resulting from failure to follow installation instructions.

To make a warranty claim, you will need your serial number, proof of purchase, and a photo of the product clearly showing the issue.

Submit a claim at [polymaster.com.au/warranty](http://polymaster.com.au/warranty).



**Questions?  
Contact Polymaster**



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