

How Septic Tanks Work

A guide to three-chamber septic tank operation for tiny homes, cabins, and off-grid builds.

Overview

A three-chamber septic tank is a simple, reliable system for managing household wastewater. It uses natural processes — gravity-based sedimentation and anaerobic fermentation — to separate, break down, and treat waste before the treated liquid (effluent) exits the tank for disposal via a drainage system.

The system works without electricity or mechanical parts. Wastewater flows by gravity from your dwelling into the first chamber, progresses through each stage of treatment, and exits as clarified effluent from the third chamber. The entire process takes approximately 30 days.

How the Three-Chamber System Works

Wastewater enters the first chamber, where heavy solids settle to the bottom (forming sludge) and lighter materials float to the top (forming a scum layer). The liquid in the middle flows through to the second chamber for further treatment. By the time it reaches the third chamber, the majority of harmful organisms have been removed through natural biological processes.

The key processes involved are:

Sedimentation: Solid waste particles are heavier than the surrounding liquid, causing them to sink to the bottom of each chamber. This physical separation is the first stage of treatment.

Anaerobic Fermentation: In the sealed, oxygen-free environment of the tank, naturally occurring bacteria break down organic matter over time. This decomposition reduces the volume of solids and converts waste into simpler compounds.

Biological Treatment: The combination of sedimentation, fermentation, and extended retention time (30+ days) effectively reduces harmful organisms in the wastewater before the effluent is released.

The Three Treatment Stages

Stage	Chamber	What Happens
1	First Chamber (Primary)	Fresh wastewater enters and separates into three layers: - Top: scum layer (fats, oils, lighter materials) - Middle: partially clarified liquid - Bottom: sludge (heavy solids) Anaerobic bacteria begin breaking down organic matter.

2	Second Chamber (Secondary)	Liquid from the first chamber flows in for further settling. Continued anaerobic fermentation occurs at a deeper level. Additional solids are separated and retained. The concentration of treatment agents increases, providing more thorough processing.
3	Third Chamber (Final / Storage)	By this stage, the liquid has been substantially clarified. The majority of harmful organisms have been removed. Treated effluent is stored here before being released to a drainage field or absorption trench.

Key Takeaways

A 1500L three-chamber septic tank is a proven, low-maintenance wastewater solution for small dwellings. It operates entirely by gravity and natural biological processes — no electricity, no pumps, no mechanical parts to service. For tiny homes, granny flats, cabins, and off-grid builds, it provides reliable, long-term wastewater management at a fraction of the cost of more complex systems.

Bush Billabongs supplies 1500L three-chamber septic tanks from \$850 AUD incl. GST. Supply only — pickup and delivery across NSW, QLD, and VIC.