

Water

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Water use, sustainability, and efficiency by choosing quality systems and materials, and providing environmentally friendly solutions.

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Septic tanks

Septic tanks provide minimal treatment for wastewater and are no longer allowed in many areas.

On this page:

- how septic tanks work
- construction and installation

A septic tank is a primary treatment system – that is, treatment of wastewater is minimal and involves only separation of solids and some preliminary anaerobic (without oxygen) action. Many local authorities no longer allow septic tanks to be installed, instead requiring anaerobic or advanced treatment systems which provide a higher level of treatment.

See [on-site wastewater treatment](#) for Building Code requirements.

How septic tanks work

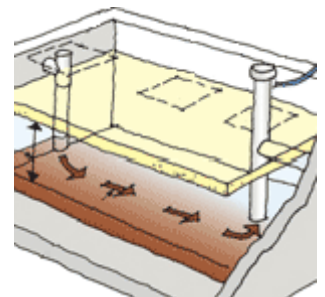
Wastewater flows into the septic tank where solids and liquids separate. Partially decomposed solids settle to form sludge on the tank floor, and lighter materials such as fat and grease form a floating layer of scum. Effluent, which may still contain small particles of solids, flows out of the septic tank to a land-application disposal area. It filters through the soil, where it is treated by bacterial action.

A single-chamber septic tank

The partially decomposed solids that settle on the bottom of the tank must be pumped out approximately every 3–5 years, depending on use.

The septic tank outlet should be below the level of the floating scum layer so the amount of these solids that are dispersed onto the land is limited.

Septic tanks are generally gravity-fed. They must therefore be installed below the level of the house. If this is not possible, waste must be pumped to the tank. Tanks may incorporate tees or baffles at the inlet and outlet pipes to slow



incoming wastewater and reduce sludge disturbance. Gas baffles may be incorporated to deflect gas from escaping through the outlet.

Gas baffles to the outlet of a septic tank

Construction and installation

Septic tanks may be factory-built and manufactured from reinforced cement mortar, fibreglass, steel, or plastics such as polyethylene and polypropylene.

Tanks may be installed underground, or above ground.

Below-ground systems are most commonly installed and must:

- resist loads from the surrounding soil and groundwater
- resist hydrostatic uplift (tendency to float)
- prevent surface and groundwater getting in
- have inspection covers that are not accessible to children
- be clear of trafficked areas.

An above-ground system may be required if the site is sub-ground rock or has a very high water table. Above ground systems must:

- be watertight
- be durable
- be UV resistant
- resist earthquake forces
- have inspection covers that are not accessible to children.

