



Understanding and Maintaining Your Septic System

A well-functioning septic system is essential for managing wastewater from your home. It keeps your property healthy and your environment safe by processing sewage and wastewater on-site. This bulletin will help you understand how your septic system works, with a focus on drip irrigation and at-grade systems and provide tips on proper care and maintenance.

How Your Septic System Works

Your septic system is a self-contained unit that treats wastewater from your home. It generally consists of three main components:

1. **Septic Tank:** This is where wastewater enters from your home. The tank separates solids, liquids, and scum. The solids settle at the bottom, while the scum (fat, oil, grease) floats to the top. The liquid (effluent) flows out of the tank to the next part of the system.
2. **Drain field (also called a leach field):** This is where treated wastewater is dispersed into the ground for further filtration. The drain field may consist of pipes or specialized distribution systems designed to allow effluent to soak into the soil and be naturally treated.
3. **Soil:** The soil beneath and around the drain field acts as a natural filter, further purifying the effluent before it re-enters the groundwater.

In **drip irrigation** and **at-grade systems**, the effluent from the septic tank is introduced to the soil through specialized methods to ensure proper treatment and prevent contamination.

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Drip Irrigation System

How It Works:

In a drip irrigation system, the effluent from the septic tank is distributed through a series of small, perforated pipes (often placed in shallow trenches) across the drain field area. These pipes slowly release the effluent into the soil in a controlled manner, allowing for efficient treatment and reducing the risk of pooling or surface discharge.

Care and Maintenance:



1. **Regular Inspections:** Have your drip system inspected annually by a licensed professional to check for clogs, leaks, or system malfunctions.



2. **Effluent Quality:** It's important to ensure that only biodegradable materials and liquids go into your septic tank. Avoid harsh chemicals, grease, and non-biodegradable items like wipes or sanitary products, as they can clog the system and reduce efficiency.



3. **Tank Pumping:** The septic tank should be pumped out every 2-3 years to remove solids and prevent buildup, which could cause the system to clog. If solids are allowed to pass into the drip lines, it can damage the distribution pipes. If your tank has a filter it should be rinsed and thoroughly cleaned as part of the pumping process.



4. **Keep Area Clear:** Avoid planting large shrubs, trees, or installing structures on top of the drip lines. Roots can infiltrate the pipes, causing blockages or damage.



5. **Water Conservation:** Reduce excessive water use in the home to prevent overloading the system. Install low-flow fixtures and spread-out laundry, dishwashing, and bathing times to avoid a surge in wastewater that could overwhelm the system.



6. **Monitor Drainage:** Keep an eye out for any standing water, foul smells, or soggy areas over the drain field, as these may indicate a malfunction or clog. If you notice these signs, contact a professional to inspect the system.

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At-Grade System

How It Works:

An at-grade system is a type of drain field system where the effluent is distributed over a shallow soil bed, usually just beneath the ground's surface. The effluent is spread out through a network of pipes placed directly on the soil or in shallow trenches. This system is typically used when the soil is not deep enough for a traditional drain field or when the water table is high.

Care and Maintenance:



1. **System Inspection:** Regular inspections by a professional are critical for ensuring the system is working efficiently. Check for signs of effluent surfacing, such as standing water or strong odors, as this may indicate that the system is failing.



2. **Proper Waste Disposal:** Like the drip irrigation system, it's important to avoid putting non-biodegradable or harsh chemicals into your septic tank, as this can overload and damage the at-grade system. This includes avoiding the disposal of oils, grease, paints, solvents, and large amounts of food waste.



3. **Septic Tank Pumping:** Regular pumping of the septic tank (every 2-3 years) will help maintain the system and prevent solids from entering the drain field area, which can clog the pipes and disrupt the flow of effluent. If your tank has a filter it should be rinsed and thoroughly cleaned as part of the pumping process.



4. **Ground Cover:** Keep the area above the drain field clear of large trees and shrubs. Roots can obstruct the system, leading to clogs. Avoid placing heavy vehicles or structures in this area, as it could compact the soil and reduce drainage efficiency.



5. **Water Use and Conservation:** Like any septic system, an at-grade system can be overloaded by excess water usage. Be mindful of water conservation, and avoid frequent or excessive use of water, especially during rainy periods when the ground may already be saturated.



6. **Surface Maintenance:** Keep the soil above the at-grade drain field from becoming compacted. This can be achieved by avoiding traffic over the system (e.g., no parking or driving on the area) and by gently aerating the soil if necessary.

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Common Issues and Signs of Trouble

Regardless of the type of septic system you have, it's important to recognize signs of concern early:



Tripped Alarm

When the level of contained waste and wastewater reaches a concerning height a float switch will trip an alarm to indicate the system needs attention to continue working properly. This is a signal to contact a tank pumper.



Slow Drains

If drains in your home are slowing down or gurgling, it may indicate a problem with your septic tank or drain field.



Foul Odors

A persistent sewage smell in your yard, especially near the drain field or around the septic tank, can indicate a system malfunction.



Standing Water

If you notice water pooling in your yard or over the drain field, it may suggest that the system is not properly draining, or the effluent is not being properly treated.



Lush Vegetation

If you see unusually green or lush grass over your drain field, it could indicate that the effluent is not being absorbed and is pooling in the soil.

A properly maintained septic system is crucial for your home's wastewater treatment, and it's especially important to take care of specialized systems like drip irrigation and at-grade systems. Regular inspections, proper waste disposal, and water conservation can help extend the life of your system and prevent costly repairs. By being proactive and mindful, you can ensure that your septic system continues to work efficiently for years to come. For additional information or assistance, consult with a licensed septic system professional.

Technical Services Team

This bulletin is intended to provide guidance to homeowners, builders, and contractors to help identify and assess foundation cracking issues in new home construction. It is always advisable to consult with a structural engineer for a more in-depth evaluation when concerns arise.