

Septic Systems: Considerations When Building or Remodeling a Home

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A newly built or remodeled home is more than a kitchen, living room, bathrooms and bedrooms. Along with providing comfort and shelter for your family, it is a functioning unit that protects their health. In the excitement of planning the appearance of your future living space, it is easy to overlook practicalities like the disposal of your family's wastes.

This fact sheet is designed to help you understand what is included in a household septic system, the types available and the process of installing one. While it may not have the appeal of the rest of the project, a correctly installed system will safeguard your family's health, protect the environment and save money. Use these tips in conjunction with *Your Septic System*, a water quality fact sheet.

Septic Systems

Typically, a waste disposal system consists of an underground, watertight receptacle called a septic tank, a distribution or diversion box and a soil absorption or drainage field. Waste water leaves the home through an underground pipe and enters the septic tank where the separation of solids occurs. The heavy solids settle to the bottom of the tank and lighter solids and grease float to the surface and form a scum. The remaining partially treated

waste water flows out of the tank to the drain field.

As partially treated waste water filters through the coarse gravel in the drain field and the underlying soil, the waste water is treated by the organisms in the soil and by physical and chemical reactions. Eventually, the treated waste water reaches the ground water.

Because the soil is the critical factor in the cleansing of the waste water, it determines the type of system that can be installed.

Where to Locate Your System

Before you break ground on your new home, have the lot checked for a suitable site for the septic system by a licensed site evaluator. Better yet, check before you buy the lot. The state of Maine has requirements regarding septic system placement, especially if you and/or your neighbor will be depending on well water for drinking. Check the minimum to see if you have room for a well and a septic system. This can save you time and money.

If you plan to change an existing home, you need to consider how the alterations will affect the waste disposal process. Your system was built to fit the needs of a family living in the structure. Adding bathrooms or increasing the number of people who use the system will increase

the flow. Taking this into account before you add on can save future problems.

In addition, it is important to know where your septic system is so you don't dig it up as you excavate for the new foundation. Be sure that your planned addition or separate buildings, patios or paved areas, such as a driveway or sidewalk, will not be located over your septic tank or absorption field.

Codes and Permits

The state of Maine has established minimum standards for the installation and operation of septic systems. However, since localities have the right to implement other rules, it is wise to investigate all local requirements before you start to build or remodel.

Check with your local licensed plumbing inspector. Before issuing a permit, the inspector will require you have a site plan from a licensed site evaluator. These individuals can plan the layout of your system based on your soil and how much you expect to use the system. For a list of licensed site evaluators in your area, contact your local Extension office.

Design and Installation

Septic systems are designed to handle the normal, daily flow of wastes that household members produce. In designing the system, one of the key factors is the number of bedrooms. For example, a minimum design flow for a two-bedroom home in Maine is 180 gallons per day. If you increase your home to three bedrooms, your system must be able to handle at least 270 gallons per day. Remember, these are minimum state standards. Local requirements may be greater.

Although minimum tank capacities will safely handle the family's wastes, the larger sizes do offer some advantages.

They allow for better separation of scum and solids. This results in few solids entering the absorption field which, in turn, prolongs the life of your system. They also require less frequent pumping and allow for future expansion of the home. In the long run, they are most cost-effective.

Your septic system needs to be considered when you remodel because you may be altering the flow of waste. According to the sizing requirements previously discussed, the addition of a bedroom (or a room that could be converted to a bedroom) may necessitate an increase in your system's size. Failure to add capacity at the time of remodeling may cause a delay and unanticipated expense if you try to sell your house. You don't want to find out that your house closing will be held up until the new septic system is installed!

Garbage grinders or disposals are not recommended for use with septic systems. These devices add additional solids to the septic tank and increase the necessity of pumping. However, if a garbage disposal is planned in a new home or remodeling project, the size of the tank needs to be increased.

Most septic tanks are made of concrete and, more recently, plastic. They will last a long time, especially if the baffles are made of concrete or plastic. Some metal tanks are still being used, but they do not have a long life expectancy level because the metal above the liquid level eventually rusts.

The contractor you hire to build or remodel your house may or may not be the one you use to install the septic system. Be certain that you have a written agreement with the installer that stipulates that final payment will not be made until the system has received

approval from the appropriate community officials.

Once your waste disposal system is in use it will need regular care and maintenance. While it is fresh in your mind, draw a diagram showing the location of the house, the tank's inspection ports, the piping and the absorption field.

For more information on this subject, contact your county Extension office.

Adapted from "Maintaining Your Septic System," a set of Cornell Cooperative Extension fact sheets. Original authors include D. Solomon, E. Dersch, J. Saumier, A. Meyer, M. Keith, J. Saumier, and M. Shortlidge.

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