

Your Septic System: Building or Remodeling a Home with a Septic System

This guide introduces siting and design requirements for septic systems. Following design criteria will help safeguard your family's health, maintain the value of your property, and protect the environment. In new construction, be sure the system will meet your present and future needs. For example, if you are building a small home with plans to enlarge it as your family grows, design the septic system to accommodate the larger size.

If you are modifying an existing home, consider how alterations will affect the wastewater disposal process. Adding occupants, garbage disposals, or other appliances can increase the volume of wastewater and solids your system must handle. Know where your septic system is located so you do not damage it during other work. Be sure that additions, detached buildings, and paved areas will not be located over your septic tank or absorption area.

Follow Local Regulations

State Department of Health regulations apply to the installation of septic systems, and regulations set by counties and in particular watersheds may be more restrictive. Consult your County Health Department and local code enforcement officer during the design and installation process.

Soil and Site Characteristics

Soil conditions determine the type of system that can be installed. For a traditional septic tank and drainfield system, there must be enough area and depth of the proper type of soil to treat effluent from the septic tank. The system must be outside the ten-year flood zone and not on an excessively steep slope. A percolation test will be conducted to see how long it takes a set volume of water to soak into the soil. Several holes may be dug, filled with water, and tested. The soil absorption system needs to be able to drain water quickly enough to prevent surface contamination, but slowly enough to allow physical, chemical, and biological treatment before the water reaches groundwater below.

The on-site wastewater treatment system must be separated from water sources and property features, as summarized in the table below (minimum distances; check current local regulations). Note that shoreline property owners should try to maximize separation distances to reduce the risk of surface water pollution.

Minimum Separation Distances from Wastewater System Components (in feet; excerpts from Table 2 of NYS Dept. of Health Appendix 75-A Wastewater Treatment Standards - Individual Household Systems

http://www.health.ny.gov/regulations/nycrr/title_10/part_75/appendix_75-a.htm#a4)

System Component	Well	Stream, Lake, or Wetland	Dwelling	Property Line
Septic tank	50	50	10	10
Distribution box	100	100	20	10
Absorption area	100	100	20	10



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In areas where conditions are *not* suitable for a traditional septic tank and soil absorption drainfield, alternatives may be used. These systems are introduced in the publication Alternative and Advanced On-site Wastewater Treatment Systems.

Septic Tank Size, Design, and Installation

New York State Department of Health regulations mandate minimum sizes and surface area for septic tanks. See the table below for basic guidelines, and consult the full reference for details on septic system models and installation and what counts as a possible bedroom. County sanitary codes and watershed regulations may also apply. Note that these are minimum capacities; installing a larger tank allows for better separation of scum and solids from wastewater, resulting in fewer solids entering the absorption area and prolonging the life of your system. A larger tank may also require less frequent pumping and allow for future expansion of the home. Garbage grinders or disposals are not recommended for use with septic systems because they increase the necessity of pumping. The required minimum septic tank size increases with a garbage disposal. Use of a two-compartment tank or two tanks in series improves settling of solids from effluent and is required for some drainfield types; the total volume capacity applies.

Minimum Septic Tank Capacities
 (from Table 3 of NYS Department of Health
 Appendix 75-A Wastewater Treatment
 Standards - Individual Household Systems
http://www.health.ny.gov/regulations/nycr/title_10/part_75/appendix_75-a.htm#a6)

Bedrooms	Minimum Tank Capacity (gallons)	Minimum Liquid Surface Area (sq. ft.)
1-3	1000	27
4	1250	34
5	1500	40
6	1750	47

Most septic tanks are made of pre-cast concrete, cast-in-place concrete, fiberglass, or polyethylene. Steel septic tanks can be installed in New York State if they are certified for corrosion resistance but tank coatings must be refinished if damaged.

Consider asking your contractor to include such useful features as risers, junction boxes, and observation ports to make future maintenance easier.

Effluent passes from the septic tank through pipes to a distribution box or similar device, and from there to trenches or other structures in the absorption area. The design specifications for the absorption area depend on the results of your percolation test, estimates of your household water usage, soil characteristics, and other factors. See state and local regulations for details.

Document the layout of the new septic system for future reference and record information about the installer(s). Once your waste disposal system is in use it will need regular maintenance. Keep records of what service is performed, when, and by whom.

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