

SITE SELECTION/PREPARATION

PROCEDURES AND CRITERIA FOR SELECTING A NEW SEPTIC TANK LOCATION

Where is a Septic System needed?

In areas where no sewer service is available, an On-Site Sewage Treatment and Disposal System, also known as a *septic system*, is needed to treat and properly dispose of sewage on site.

REQUIRED PERMITS/APPROVALS

Most states require the builder or owner to apply for permits which also include a site evaluation. This site evaluation takes into account the proper type and size of septic system, allowable setbacks, the topography, slope and proposed final grade, a proposal showing where the septic tank and drain field are to be located, loading rate (based on soil absorption rates) and any other limiting factors or special conditions. The permitting process helps to insure that septic systems are sized and constructed so that health and environment are protected. The number and type of permit(s) and fee amounts vary substantially from state to state and county to county. Each step of the process has separate applications and fees usually determined by the type of system and the amount of proposed sewage flow. To obtain specific application and fee information for a particular application, please call the on-site agent for your state and county.

TANK SITE SELECTION

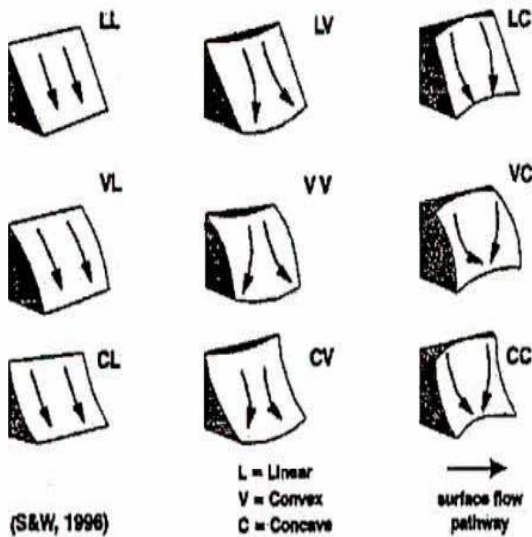
Snyder polyethylene tanks offer several advantages over concrete including ease of installation. Instead of an expensive boom lift that is typically required for concrete, Snyder septic tanks can be typically lifted by 2-3 installers and carried to the site in the back of most pickup trucks. When selecting a site, care must be taken to insure all state and county regulations are adhered to including the appropriate permits, setbacks and inspections.

In order to start with a quality onsite system installation, a critical step is the site survey. But first, the installer must assess the proposed site in terms of its existing environmental conditions—geology, prior land use, slopes, swales, wetlands, areas of potential flooding, landscape, vegetation/roots, water wells, utilities, lot lines, site improvements/structures, etc.. In particular, current runoff and water shed conditions need to be assessed, so the septic system will properly function without concerns for ground water infiltration. Landscape position, landforms, sloping terrain, structures, and paved surfaces affect surface and subsurface drainage patterns that can in turn affect system location.

Avoid areas where water runoff from any of these features is directed. Landscape features that retain or concentrate surface and subsurface flows such as swales, depressions and/or floodplains must also be avoided. Failure to do so will void the warranty.

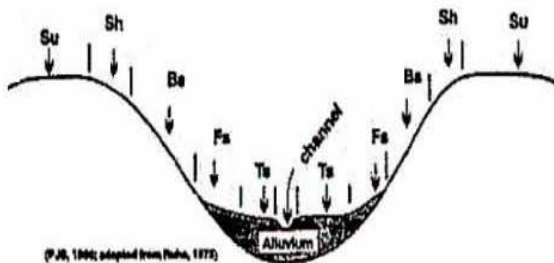
A good approach to selecting tank/system location is to focus on landscape position. The underlying bedrock often controls landscapes, which are modified by a variety of naturally occurring forces. In particular, ridgelines are narrow areas that typically have limited soil depth, but often provide good surface and subsurface drainage. Shoulder slopes and back slopes are convex slopes where erosion is common. These areas often have good drainage, but the soil mantle is typically thin and exposed bedrock outcrops are common. Side slopes are often very steep and erosion is active. Foot slopes and depressions are concave areas of soil accumulation; however, depressions usually have very poor drainage. The better draining soils are found on the summits, ridgelines, lower side slopes and the high side of foot slopes. **Toe slopes and bottomlands have significantly deeper soils, but have extremely poor subsurface drainage, and therefore, must be avoided. Failure to do so will void the warranty.**

Slope Shape - Slope shape is described in two directions: up and down slope (perpendicular to the contour), and across slope (along the horizontal contour); e.g., linear, convex, or LV.



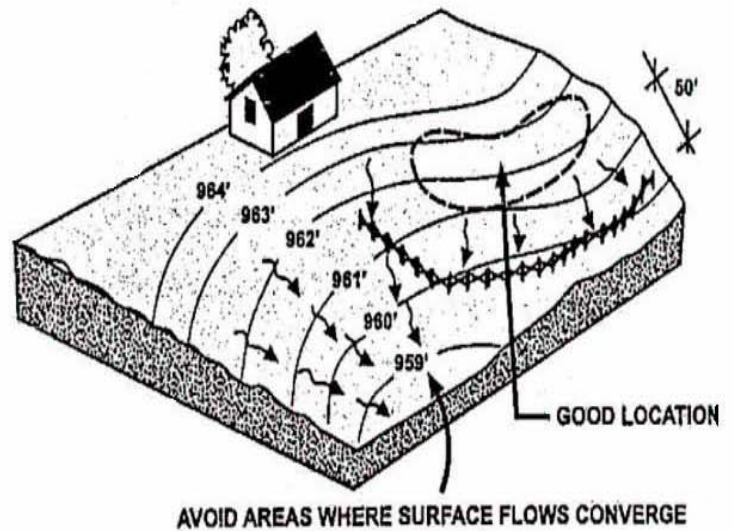
Hillslope - Profile Position (Hillslope Position in PDP) - Two-dimensional descriptions of parts of line segments (slope position) along a transect that runs up and down the slope; e.g., backslope or BS. This is best applied to transects or points, not areas.

Position	Code
summit	SU
shoulder	SH
backslope	BS
footslope	FS
toeslope	TS



Source: NRCS, 1998.

Landscape Position	Tank Siting Potential	Comments
LC VC CC	Poor	Converging flows could overload the tank with ground water
LV VV CV	Fair	Could still overload the tank during major rain storms
LL VL CL	Best	Parallel flow across the septic tank provides the best siting potential



Source: Purdue University, 1990.

Ideally, the septic tank should be located approximately 20-25 feet from the house or building and 50-100 feet from drinking wells (or as dictated by local building codes), situated on high ground, well away from any naturally occurring drainage, in order to keep ground water from entering the fresh excavation. In addition, if located in clay soil or a sloped site, a curtain drain or berm may be necessary to direct excess ground water away from the tank excavation. (Note that the tank must be installed parallel to any slope). The goal of surveying is to identify and correctly locate the treatment system components. All components need to be placed by physical location as well as at the correct elevation. In establishing elevations, remember that even though water runs downhill and gravity distribution is being used, there must be enough drop in the system to move the waste/effluent between the system parts. Be sure to take into account the 2 to 3 inch drop from the inlet pipe to the outlet pipe inside the septic tank.

Snyder Tanks are not approved for use in sites known to be subject to extremely high ground water tables, excessive runoff areas or where the grade dictates that the tank is at the lowest point on the site i.e. where the entire surrounding area drains to the tank, even if the tank is properly mounded. Failure to do so will void the warranty.

INSPECTION REQUIREMENTS

Many states, counties and local municipalities require a “pre-cover” inspection of the septic tank installation. During this time, the open excavation is susceptible to damage, especially if a large amount of rain water were to fill the new excavation and possibly infiltrate the tank. Excessive amounts of ground water could cause potential tank damage, thereby voiding the warranty. Therefore, it is imperative to protect a new excavation that is pending inspection. This can be accomplished in a variety of ways including installing a tarp over the disturbed area, installing silt fencing around the new excavation thereby directing the majority of rain water away from the excavation, mounding dirt around the disturbed site to provide positive drainage away from the site, etc. The whole idea is to prevent the area from becoming inundated with large amounts of ground water before the installation can be properly completed. Then it is imperative that the tank is properly backfilled using 12” layers that are individually compacted. Finally, it is imperative that the tank is mounded as per the Installation Instructions to provide positive drainage away from the top of the tank as well as the entire excavation.

REFERENCES

Oregon Department of Environmental Quality—Onsite Wastewater Management Program

EPA/625/R-00/008 2002 USEPA Onsite Wastewater Treatment Systems Manual

State of Indiana Department of Health—Onsite Wastewater Division

Onsite Installer magazine, August 2005 Issue

Septic Tank Do's and Don'ts



DO:

- read and follow all portions of the SII installation instructions for your tank and the *Site Selection/Preparation* document available at www.snydernet.com
- call 402-467-5221 if you any questions about the tanks, installation instructions, or the *Site Selection/Preparation* document
- use the tanks for underground and septic applications only
- ensure the installer complies with all state, county, and local codes and regulations regarding the tanks and installation
- document the tank serial number (10 digit number located under the inlet) and model number for all warranty inquiries
- use either lifting eyes or corner lifting lugs when handling the tanks
- exercise caution and safe practices in handling and installing the tank
- exercise caution with any object which may damage or puncture tanks including forklifts and excavating equipment
- locate the septic tank in an area that not be subjected to excessive pressures from elevated ground water during rain events
- call 402-467-5221 if saturated soil or seasonable water tables are indicated for special instructions
- install the tank parallel to any slope as discussed in the *Site Selection/Preparation* document
- locate the tank in an area where it will not experience vehicular traffic
- ensure the tank is level and bedded in 50/50 mixture of sand and gravel per SII installation instructions
- ensure the connections between tanks, risers, and lids are water tight and installed per SII installation instructions
- ensure the connections in and out tank are water tight—inlet and outlet connections must be made via watertight connection
- maintain the max & min burial depths—36" max: Low Profile and Sphere tanks—24" max: Ribbed tanks—9" min: all tanks
- ensure all backfill material is free of all debris including wood, concrete, rocks/boulders, masonry debris, etc.
- ensure all backfill material is free of clay and will not create voids greater than ¼"
- backfill around the tank evenly and uniformly in lightly compacted 12" layers
- ensure proper venting is maintained to the house vent for each septic and/or pump tank
- ensure all "pre-cover" inspections, if necessary, are completed prior to completing the backfilling to finish grade
- mound the excavation a min. of 5" above finish grade to allow for drainage away from the tank per SII installation instructions
- ensure all water runoff from sloping terrain, adjacent structures, paved surfaces, etc. is diverted away form the tank installation
- note the location of the inlet and outlet manholes for inspection and maintenance purposes
- inspect your system (every 2-3 years) and pump your tank as necessary (generally every 3 to 5 years)

DON'T:

- use septic/pump tanks for any other application other than it intended use—cisterns are available for underground water applications and above ground tanks for above ground applications
- use the tank as a grease trap or subject the tank to water temperature higher than 100° F
- subject the tanks to drops from higher than 48"
- subject the tanks to impact in cold weather
- locate tanks at the bottom of sloping terrain unless adequate measures are taken to prevent water runoff from infiltrating the tank excavation
- locate tanks at the lowest point of the grade—in this situation mounding alone may not provide enough drainage away from the tank excavation
- locate a septic or pump tank beneath driveways or in the pathway of heavy or vehicular traffic areas
- over-excavate or "belly-out" the excavation
- install the tanks with backfill containing clay, wood, concrete, rock/boulders, masonry debris, etc.
- leave a tank excavation open without adequately protecting the tank excavation from rain water infiltration
- backfill only to the finish grade level—eventually the settled ground will cause rainwater to pool
- allow water runoff to be directed towards or near any part of the septic system
- allow vehicular traffic over the location of the septic system
- plant trees, shrubs or a garden near the septic system—roots may clog or damage the system
- enter your tank—septic gases can deplete the amount of oxygen, which can lead to affixation

IMPORTANT: Before installing Snyder Septic Tanks, you must read *Snyder Site Selection/Preparation* document and follow the guidelines provided; and, Installation Procedures provided for each type of tank. Failure to follow these instructions, WILL VOID YOUR WARRANTY. Both documents can be found on the Snyder web site: www.snydernet.com.