

NEBRASKA

DEPT. OF ENVIRONMENT AND ENERGY

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Septic and Holding Tanks Fact Sheet

A septic tank or holding tank receives, temporarily stores, and treats wastewater prior to discharge to a soil absorption system for further treatment or transport to a point for proper disposal. A septic tank or holding tank used in an onsite wastewater treatment system must be watertight and constructed of materials not subject to excessive corrosion or decay. Acceptable tank construction materials are concrete, fiber reinforced plastic, high density plastic and fiberglass. To minimize corrosion and degradation of the concrete, all concrete interior surfaces of a tank that are exposed to air must be coated with a bitumastic or similar protective compound beginning 3 inches below the normal effluent operating level.

Concrete block and metal are not acceptable materials for new tank construction. When an existing system is being replaced, reconstructed, altered, or modified, and there is an existing concrete block or metal tank that is part of the system, the tank must be inspected. The existing tank must be replaced with a tank meeting current requirements unless the existing tank is determined to be structurally sound and watertight.

Design

The capacity or volume of a tank is measured by the dimensions from the bottom of the outlet to the bottom of the tank (length x width x depth). The depth from the invert of the outlet to the floor of the tank (liquid depth) of any septic tank or compartment must not be less than 36 inches. In addition, the diameter of a septic tank cannot be less than 60 inches and the length must be approximately two to three times the width. No septic tank or compartment can have an inside horizontal dimension less than 24 inches.

The septic tank inlet and outlet must be located opposite each other along the axis of maximum dimension of the tank and constructed of non-corrosive materials. The septic tank inlet invert cannot be not less than one inch above the outlet invert.

Inlet and outlet connections of the septic tank must be provided with baffles. The baffles must be integrally cast with the septic tank, affixed with a permanent waterproof adhesive, or affixed with stainless steel connectors top and bottom and must be constructed of acid resistant

concrete, acid resistant fiberglass or plastic. Sanitary tees must also be affixed to the inlet or outlet pipes with a permanent waterproof adhesive.

There must be one or more access manholes at least 12 inches in diameter located within six feet of all walls of the septic or holding tank. The manhole must extend through the top of the tank to a point within 12 inches, but at least six inches below grade for a tank with no manhole riser. The manhole cover must be covered with at least six inches of earth unless otherwise properly secured to prevent unwarranted access. For a tank with a manhole riser, the riser must be sufficiently large to allow for access and removal of the manhole cover. The manhole riser may extend to or above the ground surface and must also have a properly secured cover to prevent unwarranted access.

Each septic tank must have an inspection pipe at least six inches in diameter over both the inlet and outlet devices. The inspection pipe must extend to or above the ground surface and be capped flush or above finished grade. The inspection pipe cap must be properly secured to prevent unwarranted access. A manhole access riser that meets the requirements of [Title 124 - On-site Wastewater Treatment Systems](#) may be used over both the inlet and outlet devices to satisfy the inspection pipe requirement.

Septic tanks that are larger than 3000 gallons and fabricated as a single unit must be divided into two or more compartments. When a septic tank is divided into two compartments, the volume in the first compartment in the direction of flow must not be less than one-half, or more than two-thirds, of the total volume of the tank. When a septic tank is divided into three or more compartments, one-half of the total volume must be in the first compartment and the remaining half equally divided in the other compartments. Adequate access to each compartment must be provided by one or more manholes.

A holding tank must be equipped with an alarm or visible float that indicates when the tank is 90 percent or more full, except that an alarm or visible float is not required for an outdoor style toilet facility holding tank where no water supply is used.

Capacity

- Septic Tank
 - Dwelling - The minimum septic tank capacity is determined using the design flow and the tank capacity listed in the following table (Table 10.1 of Title 124)

Minimum Septic Tank Capacity for a Dwelling

| Design Flow in Gallons Per Day | Septic Tank Capacity in Gallons | | |
|--------------------------------|--|---|--|
| | For Dwelling without a Garbage Grinder or a Large Capacity Tub | Dwelling with a Garbage Grinder or a Large Capacity Tub | Dwelling with a Garbage Grinder and a Large Capacity Tub |
| 200 | 1,000 | 1,000 | 1,000 |
| 300 | 1,000 | 1,000 | 1,250 |

| | | | |
|-------|-------|-------|-------|
| 400 | 1,000 | 1,250 | 1,500 |
| 500 | 1,250 | 1,500 | 1,750 |
| 600 | 1,500 | 1,750 | 2,000 |
| 700 | 1,750 | 2,000 | 2,250 |
| 800 | 2,000 | 2,250 | 2,500 |
| 900 | 2,250 | 2,500 | 2,750 |
| 1,000 | 2,500 | 2,750 | 3,000 |

Note: A "large capacity tub" means any bathtub or similar fixture with a maximum working volume greater than 50 gallons. A "garbage grinder" is typically used or placed in the kitchen sink drain and may also be referred to as a garbage disposal or waste disposal.

For a dwelling served by more than one septic system, the total design flow for the dwelling must be distributed between the separate systems based on the percentage of the design flow that will be conveyed to each system. In no case shall the minimum septic tank capacity for any system be less than 1,000 gallons.

- Non-Dwelling - The liquid capacity of a septic tank serving a non-dwelling facility must be at least equal to 1,125 gallons plus 0.75 times the design flow in gallons per day (gpd) for flows over 1,500 gpd. For flows of 1,500 gpd or less, 1.5 times the design flow may be used, but a minimum of a 1,000 gallon tank is required. For a non-dwelling facility served by multiple septic systems, the minimum septic tank capacity for each system must be 1,000 gallons.

- Holding Tank

- Dwelling - A holding tank serving a dwelling must have a minimum capacity of 1,000 gallons for two or fewer bedrooms plus 300 gallons for each additional bedroom.
- Non-dwelling Facility - A holding tank serving a non-dwelling facility must have a minimum capacity at least five times the daily flow, but not less than 1,000 gallons unless approved by the Department in a [construction permit](#) and operated in compliance with the subsequent [operating permit](#).

The septic tank capacity required for a septic system receiving high strength or high temperature wastewater, such as from a laundry, butcher shop, camper dump station, restaurant, or similar facility, must be doubled. Because these types of wastes are not domestic waste, discharge of these wastes to a septic system is prohibited unless construction of the system is approved by the Department in a construction permit and the system is operated in compliance with the subsequent operating permit.

When more than one tank is used to obtain the required liquid volume, the tanks must be connected in series. However, no more than four septic tanks in series may be used to obtain the required liquid volume and the first tank must be no smaller than any subsequent tanks in series. For septic systems with design flows greater than 2,000 gpd, the installation of a two-compartment septic tank or two septic tanks installed in series is required.

Placement

Septic tanks and holding tanks must be bedded with at least six inches of sand or fine gravel where rock or other undesirable conditions are encountered. The tank must be placed level. Backfilling the excavation for the tank must be done in layers with sufficient compaction to avoid settling. Backfill material should be free of large stones and debris. A tank subject to flotation, such as one located in an area where the seasonal high-water table may be higher than the bottom of the tank, must be properly secured or ballasted to prevent flotation.

The installation of a septic or holding tank is prohibited within the following horizontal setback distances (Table 2.1 of Title 124) unless individually reviewed and a construction permit is issued by the Department.

Tank Setbacks

| Item | Minimum Setback Distance Feet (meters) |
|---|---|
| Surface Water | 50 ft. (15.2 m) |
| Private Drinking Water Wells | 50 ft. (15.2 m) |
| Public Drinking Water Supply Wells: | |
| Non-Community System | 50 ft. (15.2 m) |
| Community System | 500 ft. (152.4 m) |
| Community System when a septic system or soil absorption system of > 1000 gpd is proposed | 500 ft. (152.4 m) |
| All Other Water Wells | 50 ft. (15.2 m) |
| Water Lines: | |
| Pressure-Main | 10 ft. (3.1 m) |
| Pressure-Service Connection | 10 ft. (3.1 m) |
| Suction Lines | 50 ft. (15.2 m) |
| Property Lines | 5 ft. (1.5 m) |
| Parking area, driveway, sidewalk, or other impermeable surface or cover | 5 ft. (1.5 m) |
| Foundations: | |
| Except Neighbor's Foundation: | |
| Class 1 | 15 ft. (4.6 m) |
| Class 2 | 10 ft. (3.1 m) |
| Class 3 | 7 ft. (2.1 m) |
| Neighbor's Foundation: | |
| Class 1 | 25 ft. (7.6 m) |
| Class 2 | 20 ft. (6.1 m) |
| Class 3 | 15 ft. (4.6 m) |

Note: For setback purposes, foundation classes are defined as follows:

- Class 1 Foundation means a basement, a non-basement footing, or slab-on-grade living quarters where any portion of the living quarters basement, footing, or slab is lower in elevation than the onsite wastewater treatment system component.
- Class 2 Foundation means a non-basement footing foundation, trailer house, or slab-on-grade living quarters higher in elevation than the on-site wastewater treatment system. Any other foundation that is not a Class 1 or Class 3 is a Class 2 Foundation.

- Class 3 Foundation means slab-on-grade construction that is not used as living quarters.

In addition, Nebraska Health & Human Services System [Title 178 - Regulations Governing Water Well Construction, Pump Installation, and Water Well Decommissioning Standards](#) and [Title 179 - Regulations Governing Public Water Supply Systems](#) may also require more stringent setback requirements.