**Section 905.40 Septic Tanks**

a) Septic Tank Approval. Manufacturers of prefabricated septic tanks shall submit a set of plans for each size and configuration of septic tank to the Department for approval. Plans shall be drawn to scale and show all dimensions, baffles, tees, cleanouts and material specifications. The Department will provide a written approval for each size tank when the plans are found to conform to the requirements of this Part.

1) The Department will issue an approval number to each manufacturer for each series of approved septic tanks and will maintain a listing of the approved manufacturers and approved septic tank series.

2) No prefabricated septic tank shall be sold, offered for sale, or installed other than those which have been approved by the Department. The tank shall bear the manufacturer's approval number and the liquid capacity of the tank, in gallons, prominently displayed on the outside end wall of the tank above, or next to, the outlet pipe so that this information is readily visible after installation and prior to covering. The Illinois Department of Public Health approval number shall not be used on any tank other than the septic tank for which it is has been issued.

3) All persons who manufacture, sell, offer for sale or deliver septic tanks or aerobic treatment plants in or into the State of Illinois shall record the following information about each septic tank or aerobic treatment plant sold or delivered. This information shall be available for inspection by the Department or local authority upon request.

A) Name of purchaser or property owner (if different);

B) Location of delivery (county and address, legal description or driving directions);

C) Date of sale and delivery; and

D) Size of septic tank or model of aerobic unit.

b) Septic Tank Construction. Septic tanks shall be designed and constructed in accordance with the following: (Appendix A, Illustration E is an illustration of these requirements.)

1) A septic tank shall be watertight and constructed of sound and durable materials not subject to excessive corrosion, decay, frost damage or cracking due to settling or backfilling.

2) Engineering Specifications

A) The tank shall support a top-dead load of not less than 500 pounds per square foot, and concrete tanks shall have a minimum 28-day compressive strength of 3000 pounds per square inch (psi).

B) Tanks shall be designed and constructed so that they will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures when the tanks are either full or empty. The manufacturer, design engineer or structural engineer shall certify in writing to the Department that the tank is designed and constructed to meet the load requirements of this Part. If additional loading is anticipated, the tank shall be strengthened to accommodate the additional loading.

3) Materials. Septic tanks shall be constructed of any of the following approved materials:

A) Poured-in-place reinforced concrete.

B) Precast reinforced concrete.

C) Concrete block, provided that the core is filled with concrete and reinforcing rods are inserted in the core prior to pouring.

D) Reinforced plastic.

E) Reinforced fiberglass.

F) Thermoplastic.

4) Depth. The minimum liquid depth of the tank shall be 42 inches, and the maximum liquid depth shall be 72 inches.

5) Inlet and Outlet Connections

A) The invert elevation of the inlet shall be at least 2 inches above the liquid level in the tank.

B) The inlet and outlet openings of the septic tank shall be provided with cast-in watertight openings.

6) Baffles. Septic tank baffles shall meet the following requirements:

A) Inlet baffles shall be provided and shall extend at least 6 inches below the surface of the liquid.

B) Inlet baffles shall be located no farther than 12 inches from the inlet orifice.

C) Inlet and outlet baffles shall have a clearance of at least one inch but not greater than 3 inches of free space between the underside of the tank lid and the baffles.

D) Outlet baffles shall be provided and shall extend to a depth of 40% of the liquid depth.

E) Outlet baffles shall be located no farther than 6 inches from the outlet end wall.

F) Slip-in baffles shall extend the full width of the tank.

G) The sides of "V" or semi-circular type baffles shall fit tightly against the end wall of the tank.

H) Venting shall be provided through all baffles and a free vent area equal to the cross-sectional area of the building shall be provided.

I) Submerged pipe T-branches or sanitary tees may be used at the inlets and outlets in lieu of baffles, provided that all of the above-stated distances and depths are maintained.

J) Submerged pipe T-branches or sanitary tees used as inlet baffles shall be 6 inches in diameter or larger. Outlet baffles shall be 4 inches in diameter.

K) Submerged pipe T-branches or sanitary tees shall meet the requirements of ASTM 2661, ASTM 2665 or ASTM 3034, or ASTM 2751, provided that the pipe does not have an SDR (Standard Dimension Ratio) number greater than 35.

L) When submerged pipe T-branches or sanitary tees are used as baffles, it shall be the responsibility of the septic tank manufacturer to assure proper location of components during initial installation.

M) When a single compartment septic tank is manufactured or used, a gas deflection baffle shall be provided below the outlet baffle of the tank configured to deflect rising gas bubbles away from the outlet structure and toward the interior of the tank. This baffle shall be constructed of a durable material not subject to corrosion or decay. (Appendix A, Illustration E, Exhibit C is an illustration.) An NSF International/ANSI Standard 46, Section 10 septic tank filter may be used in lieu of the gas deflector baffle. The septic tank filter baffle shall be installed so that it is extended or suspended to a depth equal to 40% of the liquid level of the tank. The tank access over the filter shall be provided with an access riser that extends to 3 inches above the ground surface or greater.

7) Access. Access shall be provided over the inlet and outlet of the tank to facilitate inspection and cleaning. The manhole or access opening shall have a fitted lid with a minimum dimension of 12 inches (width or diameter). Risers shall be watertight and constructed of a durable material. If the top of the tank is greater than 12 inches below the ground surface, a riser with a minimum dimension of 12 inches (width or diameter) shall be provided to bring access over the inlet and outlet to within 12 inches of the ground surface. The joint between the septic tank and the risers shall be watertight. If a 2-compartment tank is used, and the tank has an opening over the wall between the compartments, the center opening shall have access provided within 12 inches of the ground surface.

c) Capacity

1) Septic tanks for individual residences shall be sized in accordance with Appendix A, Illustration F. Septic tanks for any establishment other than residential property shall be sized in accordance with the estimated flow provided in Appendix A, Illustration A and as provided in subsection (c)(2).

2) The volume below the liquid level for flows up to 500 gallons per day shall be at least 750 gallons. For flows greater than 500 gallons per day, the volume shall be equal to at least 1½ the estimated daily sewage flow. When the total flow exceeds 1,350 gallons per day, 2 or more tanks in series, or a multi-compartment tank, shall be installed.

d) Multiple Tanks or Compartments. When multiple compartment septic tanks or multiple septic tanks in series are used, the capacity of the first compartment or tank shall be ½ to ⅔ of the total required capacity. Two-compartment tanks shall also comply with the following:

1) The wall separating the first and second compartments shall be tight-fitting and designed to handle the differential in pressure if one side is pumped.

2) The wall separating the compartments shall extend to within 3 inches of the tank lid and shall have a free vent area equal to the cross-sectional area of the house sewer.

3) The center of the opening between compartments shall be in line with the center of the inlet and outlet openings.

4) The depth to the invert of the opening between compartments shall be 40% of the liquid depth.

5) A gas deflection baffle shall be provided below the outlet baffle of the tank configured to deflect rising gas bubbles away from the outlet structure and toward the interior of the tank. This baffle shall be constructed of a durable material that is not subject to corrosion or decay. An NSF International/ANSI Standard 46, Section 10 septic tank filter may be used in lieu of the gas deflector baffle. The septic tank filter baffle shall be installed so that it is extended or suspended to a depth equal to 40% of the liquid level of the tank. The tank access over the filter shall be provided with an access riser that extends to 3 inches or more above the ground surface.

6) For a 2-compartment tank, openings with a minimum dimension of 18 inches shall be located over the inlet and outlet of the tank or 12-inch openings as follows:

A) One located over the inlet;

B) One over the outlet; and

C) One centered over the compartment wall.

e) Septic Tank Installation

1) The septic tank shall be set level and backfilled to prevent floatation or drifting of the tank. Level shall mean plus or minus ½ inch in any direction (length or width or diameter of the tank).

2) If the inlet, outlet or access openings are to be set at or below the seasonal high water table, all openings in the tank shall be made watertight using mastic, tar, silicone caulk, etc.

3) There shall be no connections, such as joints, splices or fittings, within the area of overdig around the septic tank.

f) Abandoned Treatment Units. Septic tanks, cesspools, pit privies, aerobic treatment plants and seepage pits that are no longer in use shall be completely pumped. The floor and walls shall be cracked or crumbled so that the tank will not hold water, and the tank shall be filled with sand or soil. If the tank is removed from the ground, the excavation shall be filled with soil.

(Source: Amended at 37 Ill. Reg. 14994, effective August 28, 2013)