

Louisiana Administrative Code
Title 51
Part XIII. Sewage Disposal

**Regulations Regarding Septic Tank Installations with Oxidation Ponds
For Individual Residential Installations**

Chapter 3. General Requirements for Sewerage Disposal

§303. Responsible Parties

- A. A person who owns, operates, manages, or otherwise controls any premises, shall provide for sewage disposal in a manner which is in compliance with this Code.

§305. Discharges

- A. A person shall not directly or indirectly discharge, or allow to be discharged, the contents or effluent from any plumbing fixtures, vault, privy, portable toilet, or septic tank, into any road, street, gutter, ditch, water course, body of water, or onto the surface of the ground.

Chapter 7. Individual Sewerage Systems

Subchapter A. General Requirements

§703. Plans

- A. The review and approval of plans and specifications for the proposed individual sewerage system shall be made in accordance with the "Regulations Controlling the Design and Construction of Individual Sewage Systems" (See Chapter 7, Subchapter B).

Subchapter B. Design and Construction Regulations

§715. Septic Tanks

- A. A septic tank is a watertight tank made of steel, concrete or other approved materials in which the settleable solids of sewage settle out and are largely changed into liquids or gases by bacterial decomposition. The remaining residue in the tank is a heavy, black semi-liquid sludge which must be removed from the tank periodically. Although the completely digested sludge contains relatively few disease germs, in cleaning the tank it is impossible to remove the digested sludge without removing some undigested material. Therefore, it is particularly important that the removed sludge be disposed of in a safe manner. There are commercial service companies that will contract for septic tank cleaning and sludge disposal. Such commercial services are controlled by a permit system in accordance with §901 of this Part.
- B. Multiple compartment septic tanks or single chamber septic tanks in series provide more effective treatment than single chamber tanks of the same total capacity; therefore, the use of multiple compartment tanks or single tanks in series is encouraged. However, single chamber septic tanks are acceptable.

- C. The velocity of flow through the tanks must be such that maximum solids and scum retention is achieved. Vertical cylindrical tanks must have horizontal (inlet-to-outlet) separation of at least 24 inches.
 - 1. Tees or baffles must be used at the inlet. The outlet must be designed so as to preclude floating solids from escaping from the tank. The inlet tee or baffle diverts the incoming sewage toward the bottom of the tank without disturbing the scum which forms on the surface of the liquid, and the outlet prevents the surface scum from flowing out of the tank.
- D. The minimum total septic tank liquid capacity required is 2 1/2 times the estimated average daily design flow. Sewage loading criteria for determining the average daily design flow and organic loading are contained in Chapter 15 of this Part. One-bedroom residences may, however, utilize a 500 gallon tank.

NOTE: The minimum allowable total septic tank volume for all applications is 500 gallons.

- E. The distance between the inlet and outlet openings in the tank wall, measured horizontally, shall be not less than 24 inches. The distance between the inlet and outlet shall exceed the width of rectangular and oval-shaped tanks.
- F. The tank shall operate with a liquid depth between a minimum of 30 inches and a maximum of 72 inches measured vertically from the invert of the outlet (overflow level) to the bottom of the tank. Recent septic tank studies have indicated the shallower tank to be more efficient and is therefore preferred.
- G. For tanks having straight vertical sides, the dimension between the top of the tank and the liquid level shall not be less than 15 percent of the liquid depth. In horizontal cylindrical tanks, the volume of the air space above the liquid shall not be less than 15 percent of the liquid capacity. In the latter case, this condition is met if the liquid depth (distance from outlet invert to bottom of tank) is at least 79 percent of the diameter of the tank.
- H. A single tank may be divided into two or more compartments by means of internal partitions. Each compartment shall conform to the dimensions limitations for complete tanks and shall have a liquid capacity of at least 250 gallons. The total liquid capacity shall conform to the requirements for single chamber tanks. No tanks shall have more than three compartments.
- I. The tank shall be constructed of materials which are corrosion resistant and provide a watertight permanent structure. The cover of the tank shall be designed for a dead load of not less than 150 pounds per square foot. Concrete covers must be reinforced with steel and must be not less than 4 inches thick. Metal septic tanks shall comply with the requirements of §715.O. Tanks of other materials such as fiberglass will be reviewed for acceptance on an individual basis. They will be required to comply generally with the basic applicable standards for metal septic tanks.
- J. Access to the septic tank for cleaning and inspection shall be provided by a removable cover or manhole. Both inlet and outlet devices as well as each compartment in multiple compartment tanks must be accessible. Manholes, when used shall be at least 20 inches square or 24 inches in diameter and provided with covers which can be sealed watertight. Septic tanks with removable covers must be provided with an 8-inch inspection hole over the inlet and the outlet.
- K. Either tees or baffles shall be provided at the inlet of the tank and shall extend upward at least 6 inches above the liquid level of the tank. The inlet tee or baffle shall extend downward to at least 6 inches below the liquid level, but it shall not extend below the level of the lower end of the outlet tee or baffle. At least 2 inches of open space shall be provided above the baffle or tee to provide ventilation to the tank through the building plumbing system.
- L. On the outlet side the tee or baffle shall extend downward to a distance below the water surface equal to 40 percent of the liquid depth of tanks with vertical sides and 35 percent of liquid depth of tanks of other shapes as measured to the nearest inch. If a tee or baffle is used in the outlet the upper end shall extend 6 inches above the liquid level.

- M. Inlet and outlet fittings (tees or ells) must be of cast iron, schedule 40 PVC or ABS plastic or other approved material.
- N. The invert of the inlet shall be located at least 2 inches above the invert of the outlet.
- O. Metal septic tanks shall be prefabricated of a minimum of 14 gauge commercial grade steel. Corrosion protection shall, at a minimum, consist of a hot-dipped asphalt coating of at least 0.025-inch thickness properly applied to all surfaces of the new, clean, bare metal.
- P. The location of a septic tank shall comply with minimum distance requirements from water wells, water lines, etc. as contained in Part XII, of this Code.
- Q. The use of septic tanks in series is encouraged. The first tank shall have at least a 500-gallon liquid capacity and all subsequent tanks shall have at least 300-gallon liquid capacities. The total capacity of all tanks in series must comply with the capacities for septic tanks as prescribed in §715.D.
- R. Piping from the house to the septic tank must be such that the waste flow does not disturb the retention of scum and sludge in the tank. To attain this, the inlet piping from the house must have a minimum diameter of four inches and be laid on a slope of at least 1/8 inch per foot. The slope for the last 10 feet of line preceding the septic tank must not exceed 1/4 inch per foot. All plastic piping, excluding perforated pipe, must be a minimum of SDR 35 sewer and drainage pipe or equivalent.
- S. Backfill around septic tanks must be made in thin layers thoroughly tamped in a manner that will not produce undue strain on the tank. Sufficient soil cover can be provided over the top of the septic tank to permit grass growth. However, no other obstruction to access (i.e., concrete slabs, buildings, etc.) shall be allowed.
- T. Septic tanks should be inspected every six years and pumped at least every eight years by a licensed sewage hauler.
- U. Untreated or uncoated metal septic tanks shall not be used.
- V. Abandoned septic tanks (tanks no longer in active use) shall be pumped out by a licensed sewage hauler, then removed or the cover discarded and the tank filled with soil to natural grade. The contents of the abandoned tank shall not be placed into a newly installed individual sewerage system.

§721. Oxidation Ponds

- A. An oxidation pond is a shallow pond designed specifically to treat sewage by natural purification processes under the influence of air and sunlight. The stabilization process consists largely of the interactions of bacteria and algae. Bacteria digest and oxidize the constituents of sewage and render it harmless and odor free. Algae utilize carbon dioxide and other substances resulting from bacterial action and through photosynthesis produce the oxygen needed to sustain the bacteria in the treatment process. During the detention period, the objectionable characteristics of the sewage largely disappear.
- B. The minimum surface area of an oxidation pond must be no less than 400 square feet with a 4 to 5 foot average liquid depth and vertical side walls. This minimum size pond is adequate for design flows of up to 400 gallons/day (gpd). For design flows in excess of 400 gpd, the pond area must be increased to provide sufficient volume (at the 4 foot depth) to hold 30 days worth of flow (a 30-day retention period). For wastes with high BOD loadings, special consideration for increasing pond size must be given.
- C. The actual layout of any pond system will be governed to a great extent by the topography of the particular location. However, an oxidation pond must be located so as to comply with the minimum distance requirements from water wells, lines, etc., as contained in Part XII of this Code. It is also desirable for

aesthetic reasons to locate it as far as possible, but at least 50 feet from any dwelling and no less than 20 feet from the property line to water's edge at normal operating line.

- D. As mentioned, the use of the minimum surface area of 400 square feet requires that an oxidation pond be furnished with vertical side walls so that an adequate volume for treatment is provided. One type of construction utilizes treated timber, which under normal soil conditions, is acceptable for the vertical side walls of a 20 foot by 20 foot oxidation pond with a 5 foot average water depth. Either of these designs requires very little maintenance.
- E. Vertical side walls must be of cypress or treated timbers or concrete blocks and so constructed as to provide a permanent structure.
- F. Although not encouraged, a pond may be constructed with sloping sides and earthen levees. The design requires a minimum surface area of 625 square feet with a 5 foot liquid depth at the center in order to achieve the required volume. The cost of this design is less than that of the vertical wall ponds referred to above, but more space is needed and routine maintenance requirements such as levee mowing are greater. The slope of the natural earth side walls must not be shallower than one-to-one (45-degree angle).
- G. A septic tank must precede the oxidation pond and must comply with the septic tank requirements presented in these regulations.
- H. The pipe from the septic tank to the pond as well as the outfall pipe from the pond must be at least 4 inches in diameter and placed at a minimum slope of 2 inches per 100 feet. The inlet must extend 4 to 6 feet horizontally into the pond and be directed downward at least 1 1/2 to 2 feet below the liquid surface level. The outlet must extend 4 to 6 feet horizontally into the pond and consist of a tee with the invert set at the operating water level of the pond. One leg of tee must be open and extend above the water level, while the down leg is extended 1 1/2 to 2 feet below the water level. The invert of the pond outlet must be lower than the pond inlet invert. Additionally the invert of the pond inlet must be at least 2 inches lower than the invert of the septic tank outlet.
- I. The pond shall be enclosed by a suitable non-climbable fence to keep out children, pets and livestock. An open type fence (woven wire) is preferable because it will not restrict sunlight and air which are necessary for the treatment. The fence shall be at least 5 feet in height and be provided with a locked gate.
- J. Abandoned oxidation ponds (ponds no longer in active use) shall be dewatered, allowed to dry and then filled with soil to natural grade.