

Septic Tanks and Dosing Chambers

Both concrete septic tanks and dosing chambers should be placed on original soil. They should not be placed on unconsolidated or un-compacted fill greater than 6 inches deep. Some fill is often needed to make a smooth bearing surface in the bottom of the excavation that will receive the tank or chamber.

Concrete tanks or chambers often leak if not coated with a bituminous coating or other sealer. Such sealing is recommended in all dosing chambers and septic tanks placed in or near ground water or in porous soils.

All plastic, polyethylene, and fiberglass tanks must be installed according to the manufacturers' recommendations (IDAPA 58.01.03.007.18).

All septic tanks must have a riser if the manhole opening of the tank is deeper than 24 inches below the ground surface. The riser must come within 18 inches of the surface (IDAPA 58.01.03.007.19). Dosing chambers must have the manhole extended to the ground surface.

ABS Schedule 40 or equivalent is recommended to connect septic tanks to dosing chambers. It is also recommended that the pipe span the septic tank excavation and extend at least 3 feet beyond. Thinner-walled ASTM D3034 plastic pipe may be used if the void at the tank's side is compacted with fill material. The material must be granular, clean, and compacted to 90% proctor density. The ASTM D3034 grade of plastic pipe is suitable if placed on undisturbed earth, used as the house sewer, and used as the distribution line to the drainfield and within the drainfield. There should not be less than 12 inches of cover over thin-walled plastic pipe. ASTM D2729 pipe is acceptable for use as the effluent pipe. ASTM D2729 is not a suitable class of pipe to span the septic tank or for dosing chamber excavation. ASTM D2729 must be laid on a stable base and not driven over by excavation equipment. See IDAPA 58.01.03.007.21 for inlet and outlet piping requirements.

Specifications

1. General
 - a. The manufacturer shall provide structural design and certification by an engineer licensed in the State of Idaho.
 - b. The tank shall be designed for the following minimum loading conditions assuming a maximum coverage of 3 feet:

Top: 375 pounds per square feet

Walls shall be designed for an inside hydrostatic water pressure to the level of the outlet and for an outside earth pressure equivalent to that exerted by a fluid weighing 30 pounds per cubic foot, in accordance with accepted engineering practice.

Each tank shall be structurally designed to withstand all anticipated earth or other loads. If the tank is to be stable with greater than 3 feet of cover, the loading

requirements should be increased accordingly and the maximum cover depth marked on the tank.

- c. All tanks shall be capable of being filled with water above ground for 24 hours without leaking or a major deflection in shape.
- d. All tanks shall be installed in strict accordance with the manufacturer's recommended installation instructions.
- e. If pipe is used as the tank baffle system, it shall meet or exceed the rating of ASTM D3034.

2. Concrete Tanks

- a. The walls and bottom slab shall be poured monolithically; alternatively, water stops may be provided.
- b. Reinforcing steel shall be ASTM A615 Grade 60, yield strength (f_y) = 60,000 pounds per square inch (psi). Details and placement shall be in accordance with American Concrete Institute (ACI) 315 and ACI 318 or equivalent as certified by a licensed professional engineer experienced in the use of structural reinforcement fibers.
- c. Concrete shall be ready-mix with cement conforming to ASTM C150, Type II. It shall have a cement content of not less than 5 sacks per cubic yard and a maximum aggregate size of three-quarter inch. Water and cement ratio shall be kept low ($0.45\pm$), and concrete shall achieve a minimum compressive strength of 3,000 psi in 28 days.
- d. Form release used on tank molds shall be compatible with the water-seal method used.
- e. Tanks shall not be moved from the manufacturing site to the job site until the tank has cured for 7 days or has reached two-thirds of the design strength.
- f. To demonstrate watertightness, tanks shall be tested before acceptance. The tank shall be tested by filling with water to the soffit and letting stand. After 24 hours, the tank shall be refilled to the soffit and examined for visible leaks.

3. Polyethylene and Fiberglass Tanks

- a. Polyethylene and fiberglass tanks shall meet or exceed Canadian Standard CAN 3-B66-M85. A report from an independent testing company certifying that the tank meets the Canadian Standard is required.
- b. Installation instructions, prepared by the manufacturer, shall accompany each tank. Strict conformance with the backfill instructions will be required.
- c. On-site hydrostatic testing is suggested before installation. The tank should be filled with water for 1 hour. Any leakage or dimensional change greater than one-half inch shall be cause for rejection.

4. Septic Tank Abandonment. If in the opinion of the Director (see IDAPA 58.01.03.003.10 for definition), a septic system is abandoned (IDAPA 58.01.03.003.01), and it is necessary to protect the public's health and safety from the eventual collapse of the septic tank or its misuse, the Director shall require the septic tank to be abandoned by (IDAPA 58.01.03.007.23):
 - a. Disconnecting the inlet and outlet piping, and
 - b. Pumping the scum and septage with approved disposal, and
 - c. Filling the septic tank with earthen materials, or
 - d. Physically destroying or removing the septic tank from the ground