

3.2.3 Septic Tanks and Dosing Chambers

~~Both concrete and~~ Septic tanks and dosing chambers shall be installed level and should be placed on undisturbed original soil if possible. Some fill is often needed to make a smooth bearing surface in the bottom of the excavation that will receive the tank or chamber. ~~They~~ A tank or chamber should not be ~~placed~~ installed on unconsolidated or un-compacted fill greater than 6 inches deep. If fill material greater than 6 inches in depth is necessary to level the installation surface it should be compacted to 95% proctor to mitigate potential settling issues. ~~Some fill is often needed to make a smooth bearing surface in the bottom of the excavation that will receive the tank or chamber.~~ All plastic, polyethylene, and fiberglass tanks must be installed according to the manufacturers' recommendations including required bedding material for the tank excavation (IDAPA 58.01.03.007.18).

Concrete tanks or chambers ~~often may~~ leak if they are 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. The sealant should cover all of the tank walls and the tank bottom. The sealant may be placed on the inside or outside of the septic tank. If located on the inside of the tank the sealant should be compatible with sewage. If located on the outside of the tank the required manufacturer labeling must still be legible for the inlet and outlet, manufacturer's name or trademark, or the liquid capacity of the tank somewhere on the tank body or tank lid.

If a septic tank or dosing chamber is installed in seasonal high ground water a vertical separation distance of 2 feet shall be met from the joint between the tank body and the tank lid (IDAPA 58.01.03.007.17). Monolithically constructed tanks (one piece tanks) are highly recommended to be used if the tank is to be installed in seasonal high ground water. Multi-piece tanks should be avoided for ground water installations if possible. If a multi-piece tank is installed in ground water the vertical separation distance shall be to the top of the tank if a lid-body joint is absent. Multi-piece tanks installed in ground water shall be leak tested upon installation.

~~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 bring the access lid~~ bring the access lid within 18 inches of the ground surface (IDAPA 58.01.03.007.19). It is highly recommended that all tank access lids be brought to grade with a riser and fitted with a secured lid regardless of the tank's installation depth. ~~Dosing~~ All dosing chambers must have the access manholes extended to the ground surface regardless of the chamber's installation depth.

ABS Schedule 40 or equivalent is recommended to span the tank excavation, or connect septic tanks to dosing chambers or other septic tanks in series (IDAPA 58.01.03.007.21). ~~It is also recommended as~~ The pipe used to span the septic tank and dosing chamber excavations and must also extend at least 3 feet beyond the excavation (IDAPA 58.01.03.007.21). Thinner-walled ASTM D3034 plastic pipe may be used for these applications if the excavation void at the tank's sides is compacted with fill material (IDAPA 58.01.03.007.21.b). The material must be granular, clean, and compacted to 90% proctor density. The ASTM D3034 grade of plastic pipe is also

suitable if ~~it is~~ 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 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 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.~~

e.—~~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.~~

e.—~~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.~~

After installation septic tanks and dosing chambers require periodic maintenance. Maintenance of these tanks is easier if the manhole access lids are brought to grade as described above. Minimum maintenance includes periodic pumping of the tank as described in Section 6. Other maintenance may include cleaning of a septic tank effluent filter (Section 5.9) or cleaning of a pump screen in a dosing chamber. All materials washed from either of these filters should be discharged into the inlet side of the septic tank. It may also be necessary to perform periodic maintenance of the inlet and outlet baffle of the septic tank.

On occasion it may be necessary to abandon a septic tank due to age, condition, or replacement. ~~Septic Tank Abandonment.~~ Septic tank abandonment may also be necessary 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. If a septic tank or dosing chamber must be abandoned it must be done in accordance with the following requirements by (IDAPA 58.01.03.007.23):

- a. Disconnecting the inlet and outlet piping, and
- b. Pumping the scum and septage by a permitted pumper with an approved disposal location, and
- c. Filling the septic tank with earthen materials, or
- d. Physically destroying or removing the septic tank from the ground.