4.22 Intermittent Sand Filter

Revision: February 4, 2016
Installer registration permit: Complex
Licensed professional engineer required: Yes

4.22.1 Description

An intermittent sand filter is a bed of medium sand in a container that filters and biologically treats septic tank effluent. Effluent is pressure dosed across the top of the medium sand in small doses and percolates through the filter media. The filter effluent is then collected by an underdrain at the bottom of the filter and is distributed to a disposal trench of reduced dimension. Components of the intermittent sand filter include a septic tank, dosing chamber, pump (or siphon) and controls, distribution network, sand filter, and drainfield.

4.22.2 Approval Conditions

1. The system must be designed by a PE licensed in Idaho.
2. All pressure distribution components shall be designed according to the pressure distribution system guidance (section 4.19).
3. The design engineer shall provide an O&M manual for the system to the health district before permit issuance.
4. The intermittent sand filter container shall meet the same separation distance requirements as a septic tank.
5. The bottom of the filter must not come within 12 inches of seasonal high ground water.
6. Effluent shall not discharge to the drainfield without passing through the filter first.
7. Nondomestic wastewater must be pretreated to residential strength before discharge to the intermittent sand filter.

4.22.3 Design Requirements

Minimum design requirements for the intermittent sand filter components are provided below.

4.22.3.1 Intermittent Filter

1. The filter container shall be constructed of reinforced concrete or other materials where equivalent function, workmanship, watertightness, and at least a 20-year service life can be documented.
2. The following requirements must be met for flexible membrane liners:
   a. Have properties equivalent to, or greater than, 30-mil PVC.
   b. Have field repair instructions and materials provided to the purchaser of the liner.
   c. Have factory-fabricated *boots* for waterproof field bonding of piping to the liner.
   d. Liner must be placed against smooth, regular surfaces free of sharp edges, nails, wire, splinters, or other objects that may puncture the liner. Provide a 4-inch layer of clean sand for liner protection.
3. Application rate of septic tank effluent to the filter must be 0.7 gallons/ft^2/day.