

R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.09 General Permit allows an engineered pad system receiving wastewater treated to a level equal to or better than that provided by a 4.02 General Permit septic tank.
1. Definition. For purposes of this Section, the “engineered pad system” means a disposal technology characterized by:
 - a. The delivery of treated wastewater by gravity or pressure distribution to the engineered pad and sand bed assembly, which then disperses the wastewater into the native soil;
 - b. Passage of the treated wastewater through a pad and engineered sand bed by gravity under unsaturated flow conditions; and
 - c. Provision of additional passive biological treatment to the wastewater and reduced biomat formation at the inlet absorption surface of the underlying native soil.
 2. The applicant may use an engineered pad system if:
 - a. The native soil is excessively permeable,
 - b. There is little native soil overlying fractured or excessively permeable rock, or
 - c. The available area is limited for installing a disposal field system authorized by R18-9-E302.
- B. Performance. An applicant shall ensure that:
1. Any proprietary engineered pad system previously approved by the Department is designed on the basis that the released treated wastewater to the native soil meets the following criteria:
 - a. TSS of 50 milligrams per liter, 30-day arithmetic mean;
 - b. BOD5 of 50 milligrams per liter, 30-day arithmetic mean;
 - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
 - d. Total coliform level of 1,000,000 (Log₁₀ 6) colony forming units per 100 milliliters, 95th percentile.
 2. Any engineered pad not previously approved by the Department is designed on the basis that the treated wastewater released to the native soil does not exceed the performance values specified for the systems described in R18-9-E302. If an applicant wishes to use different performance values, the Department shall review the system as established under R18-9-A309(E).
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit design materials and construction specifications for the engineered pad system.
- D. Design requirements. An applicant shall ensure that:
1. Gravity and pressurized wastewater delivery is from a septic tank or intermediate watertight chamber equipped with a pump and controls. The applicant shall ensure that:
 - a. Delivered wastewater is distributed onto the top of the engineered pad system and achieves even distribution by good engineering practice, and
 - b. The dosing rate for pressurized wastewater delivery is at least four doses per day and no more than 24 doses per day.
 2. The sand bed consists of mineral sand washed to conform to the “Standard Specification for Concrete Aggregates,” (C 33-99aE1), which is incorporated by reference in R18-9-E308(D)(2)(a), unless the performance testing and design specifications of the engineered pad manufacturer justify a substitute specification. The applicant shall ensure that:
 - a. The sand bed design provides for the placement of at least six inches of sand bed material below and along the perimeter of each pad, and
 - b. The sand bed contact with the native soil absorption system is level.
 3. The wastewater distribution system installed on the top of the engineered pad system is covered with a breathable geotextile material that is itself covered with at least 10 inches of backfill.
 - a. The applicant shall ensure that rocks and cobbles are removed from backfill cover and grade the backfill for drainage.
 - b. The applicant may place the engineered pad system above grade, partially bury it, or bury it depending on site and service circumstances.
 4. The engineered pad system is constructed with durable materials and capable of withstanding stress from installation and operational service; and
 5. At least two inspection ports are installed in the engineered pad system to confirm unsaturated wastewater treatment conditions at diagnostic locations.
- E. Installation requirements. In addition to the applicable requirements specified in R18-9-A313, an applicant shall place sand media to obtain a uniform density of 1.3 to 1.4 grams per cubic centimeter.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, an

applicant shall inspect the backfill cover for physical damage or erosion and promptly repair the cover, if necessary.

Historical Note

New Section adopted by final rulemaking at 7 A.A.R. 235, effective January 1, 2001 (Supp. 00-4). Amended to correct a manifest typographical error in subsection (B)(2) (Supp. 01-1).