

**TITLE 18. ENVIRONMENTAL QUALITY**  
**CHAPTER 9. WATER POLLUTION CONTROL**  
**PART E. TYPE 4 GENERAL PERMITS**

**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 for the use of an engineered pad system receiving wastewater treated to a level equal to or better than that specified in R18-9-E302(B).
1. Definition. For purposes of this Section, an “engineered pad system” means a treatment and disposal technology characterized by:
    - a. The delivery of pretreated wastewater by gravity or pressure distribution to the engineered pad and sand bed assembly, followed by dispersal of the wastewater into the native soil; and
    - b. Wastewater movement through the engineered pad and sand bed assembly by gravity under unsaturated flow conditions to provide additional passive biological treatment.
  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 works authorized by R18-9-E302.
- B.** Performance. An applicant shall ensure that:
1. The engineered pad system is designed so that the treated wastewater released to the native soil meets the following criteria:
    - a. TSS of 50 milligrams per liter, 30day arithmetic mean;
    - b. BOD<sub>5</sub> of 50 milligrams per liter, 30day arithmetic mean;
    - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5month arithmetic mean; and
    - d. Total coliform level of 1,000,000 (Log<sub>10</sub> 6) colony forming units per 100 milliliters, 95th percentile; or
  2. The engineered pad system is designed to meet any other performance, loading rate, and configuration criteria specified in the reviewed product list maintained by the Department as required under R18-9-A309(E).
- C.** Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R189A301(B) and R189A309(B), an applicant shall submit design materials and construction specifications for the engineered pad system.
- D.** Design requirements. In addition to the applicable requirements in R18-9-A312, 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, C33-03 (2003),” which is incorporated by reference in R18-9-E308(D)(2), 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 6 inches of sand bed material below and along the perimeter of each pad, and
    - b. The contact surface between the bottom of the sand bed and the native soil is level;
  3. The spacing between adjacent two-pad-wide rows is at least two times the distance between the bottom of the distribution pipe and the bottom of the sand bed or 5 feet, whichever is greater;
  4. The wastewater distribution system installed on the top of the engineered pad system is covered with a breathable geotextile material and the breathable geotextile material is 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 fully bury it depending on site and service circumstances;
  5. The engineered pad system is constructed with durable materials and capable of withstanding stress from installation and operational service; and
  6. 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 in R18-9-A313(A), 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 in R18-9-A313(B), an applicant shall inspect the backfill cover for physical damage or erosion and promptly repair the cover, if necessary.