

Pima County Department of Environmental Quality
Alternative Wastewater On-Site Residential Treatment System Checklist
for Engineers, Designers, and Site Evaluators
per Arizona Administrative Code Title 18, Chapter 9

R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Design Flow

General Permit

- _____ An applicant may use a composting toilet if:
 - Limited water availability prevents use of other types of on-site wastewater treatment facilities,
 - Environmental constraints prevent the discharge of wastewater or nutrients to a sensitive area,
 - Inadequate space prevents use of other systems,
 - Severe site limitations exist that make other forms of treatment or disposal unacceptable, or
 - The applicant desires maximum water conservation.
- _____ A permittee may use a composting toilet only if:
 - Wastewater is managed as provided in this Section and, if gray water is separated and reused, the gray water reuse complies with 18 A.A.C. 9, Article 7; and
 - Soil conditions support subsurface disposal of all wastewater sources.

Restrictions.

- _____ Ensure that no more than 50 persons per day use the composting toilet.
- _____ The composting toilet only receives human excrement unless the manufacturer's specifications allow the deposit of kitchen or other wastes into the toilet.

Performance. (Must meet all requirements)

- _____ Composting toilet provides containment to prevent the discharge of toilet contents to the native soil except leachate, which may drain to the wastewater disposal works described below in Interceptor Design requirements;
- _____ Composting toilet limits access by vectors to the contained waste;
- _____ Wastewater is disposed into the subsurface to prevent any wastewater from surfacing.

Notice of Intent to Discharge (The following information must be provided)

1. Composting toilet.

- _____ The name and address of the composting toilet system manufacturer;
- _____ A copy of the manufacturer's warranty, and the specifications for installation operation, and maintenance;
- _____ The product model number;
- _____ Composting rate, capacity, and waste accumulation volume calculations;
- _____ Documentation of listing by a national listing organization indicating that the composting toilet meets the stated manufacturer's specifications for loading, treatment performance, and operation, unless the composting toilet is listed under R18-9-A309(E) or is a component of a reference design approved by the Department;
- _____ The method of vector control;
- _____ The planned method and frequency for disposing the composted human excrement residue; and
- _____ The planned method for disposing of the drainage from the composting unit; and

2. Wastewater.

- _____ Indicate the number of bedrooms in the dwelling or number of persons served on a daily basis, as applicable, and the corresponding design flow of the disposal works for the wastewater;
- _____ Provide results from soil evaluation or percolation testing that adequately characterize the soils into which the wastewater will be dispersed and the locations of soil evaluation and percolation testing on the site plan; and

_____ Indicate the design for the disposal works in subsection (F), including the location of the interceptor, the location and configuration of the trench or bed used for wastewater dispersal, the location of connecting wastewater pipelines, and the location of the reserve area.

Composting Toilet Design Requirements

- _____ The composting chamber is watertight, constructed of solid durable materials not subject to excessive corrosion or decay, and is constructed to exclude access by vectors;
- _____ The composting chamber has airtight seals to prevent odor or toxic gas from escaping into the building. The system may be vented to the outside;
- _____ The capacity of the chamber and rate of composting are calculated based on:
 - The lowest monthly average chamber temperature; or
 - The yearly average chamber temperature, if the composting toilet is designed to compost on a yearly cycle or longer; and
- _____ The composting system provides adequate storage of all waste produced during the months when the average temperature is below 55°F, unless a temperature control device is installed to increase the composting rate and reduce waste volume.

Interceptor Design Requirements

1. Interceptor

- _____ An applicant may use an interceptor if:
 - Wastewater passes into an interceptor before it is conducted to the subsurface for dispersal;
 - The interceptor is designed to remove grease, oil, fibers, and solids to ensure long-term performance of the trench or bed used for subsurface dispersal;
 - The interceptor is covered to restrict access and eliminate habitat for mosquitoes and other vectors;
 - Minimum interceptor size is based on design flow.
 - a. For a dwelling, the following apply:

No. of Bedrooms	Design Flow (gallons per day)	Minimum Interceptor Size (gallons)	
		Kitchen Wastewater Only (All gray water sources are collected and reused)	Combined Non-Toilet Wastewater (Gray water is not separated and reused)
1 (7 fixture units or less)	90	42	200
1-2 (greater than 7 fixture units)	180	84	400
3	270	125	600
4	330	150	700
5	380	175	800
6	420	200	900
7	460	225	1000

- b. For other than a dwelling, minimum interceptor size in gallons is 2.1 times the design flow from determined from the Arizona Administrative Code, Title 18, Chapter 9 Table 1, Unit Design Flows.

2. Dispersal of wastewater:
 - _____ A trench or bed is used to disperse the wastewater into the subsurface;
 - _____ Sizing of the trench or bed is based on the design flow of wastewater as determined in subsection (F)(1)(d) and an SAR determined under R18-9-A312(D);
 - _____ The minimum vertical separation from the bottom of the trench or bed to a limiting subsurface condition is at least 5 feet; and
 - _____ Other aspects of trench or bed design follow R18-9-E302, as applicable.
3. Setback distances:
 - _____ Setback distances are no less than 1/4 of the setback distances specified in R18-9-A312(C), but not less than 5 feet, except the setback distance from wells is 100 feet.

Operation and Maintenance Requirements

1. Composting toilet.
 - _____ Provide adequate mixing, ventilation, temperature control, moisture, and bulk to reduce fire hazard and prevent anaerobic conditions;
 - _____ Follow manufacturer’s specifications for addition of any organic bulking agent to control liquid drainage, promote aeration, or provide additional carbon;
 - _____ Follow the manufacturer’s specifications for operation and maintenance regarding movement of material within the composting chamber;
 - _____ If batch system containers are mounted on a carousel, place a new container in the toilet area if the previous one is full;
 - _____ Ensure that only human waste, paper approved for septic tank use, and the amount of bulking material required for proper maintenance is introduced to the composting chamber. The permittee shall remove all other materials or trash. If allowed by the manufacturer’s specifications the permittee may add, other nonliquid compostable food preparation residues to the toilet;
 - _____ Ensure that any liquid end product is:
 - Sprayed back onto the composting waste material;
 - Removed by a person who licensed a vehicle under 18 A.A.C. 13, Article 11; or
 - Is drained to an interceptor that meets Interceptor Design Requirements above;
 - _____ Remove and dispose of composted waste as necessary, using a person who licensed a vehicle under 18 A.A.C. 13, Article 11 if the waste is not placed in a disposal area for burial or used on-site as mulch;
 - _____ Before ending use for an extended period take measures to ensure that moisture is maintained to sustain bacterial activity and free liquids in the chamber do not freeze; and
 - _____ After an extended period of non-use, empty the composting chamber of solid end product and inspect all mechanical components to verify that the mechanical components are operating as designed;
2. Wastewater Disposal Works.
 - _____ Ensure interceptor is maintained regularly according to manufacturer’s instructions to prevent grease and solid wastes from impairing performance of the trench or bed used for dispersal of wastewater,
 - _____ Protect the area of the trench or bed from soil compaction or other activity that will impair dispersal performance.

Reference Design

- _____ An applicant may use a composting toilet that achieves the performance requirements in subsection (C) by following a reference design on file with the Department.
- _____ The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.

Prepared by:	Date:
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