



City of Portland, Oregon
Bureau of Development Services
Office of the Director
FROM CONCEPT TO CONSTRUCTION

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To: Ole Ersson

From: **Alternative Technology Advisory Committee:**
Joshua Klyber (chair) Aron Faegre Bob Sweeney
Jeff Cordial David Posada

RE: **Application #12-1, Composting Toilet and Urine Diversion System—
Final Recommendation**

Date: **March 27, 2019**

Summary of Proposal: The applicant requests that the Alternative Technology Advisory Committee review a composting toilet and urine diversion system designed according to the International Association of Plumbing and Mechanical Officials (IAPMO) WE-Stand (Water Efficiency and Sanitation Standard for the built environment) Section 403.0, “Composting Toilet and Urine Diversion.”

Applicable Building Code Section(s): Section 104.3.4 of the 2017 Oregon Plumbing Specialty Code (OPSC) allows the building official to approve an alternative material or method of construction if the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of the OPSC. OAR 918-770-0320 allows the use of composting toilets that meet NSF Standard No.41. Although the use of IAPMO WE Stand has not been approved by the State of Oregon, the BDS Building Official received oral approval from the State Plumbing Chief on October 2, 2018, to use the WE Stand provisions as an alternate method. The Committee reviewed the proposal using the 2017 WE Stand Section 403.3-403.9 design, construction, performance, alteration and repair of composting toilets and urine diversion system, and the attached applicant-created User’s Manual (see Attachment A). Please note that following the findings and recommendations of this Committee or the Bureau of Development Services Administrative Appeals Board does not waive any other state or federal requirements.

Committee Findings:

1. The commode may be located indoors in a residence or commercial building, including in existing lavatories where the current flush toilet is connected to a sewage system. Alternatively, commodes may be located outdoors in a suitable structure.
2. Indoor structures will remain plumbed for a water closet.
3. The compost processor can be located wherever active composting conditions can be easily maintained, such as a stand-alone outdoor structure. This type of system can supplement a permitted sewage system.

4. The system can supplement a permitted sewage system or be used as a stand-alone system replacing a traditional flush toilet. (Note: it is not a replacement for a sanitary system intended to process gray water from sinks, bathtubs, and showers.)
5. A plumbing permit must be obtained for graywater and other plumbing installations in house. Please note: per Oregon State law, human sewage may not be included in a graywater system. Any graywater system used on the site must be adjunct to, and not a part of, the composting toilet and urine diversion system.
6. Detailed plans for the commode (location in bathroom, volume, etc.) must be included.
7. A site plan, including where containers will be stored, location of plants, etc., that shows there is sufficient area for on-site distribution of the compost and treated materials, must be included.
8. A spillage plan must be created in accordance with the attached Operation and Maintenance Manual.
9. Protocols for adjusting the carbonation level of compost must follow the Operation and Maintenance Manual.
10. A diagram of vents used in each compost processor that uses a hinged roof to cover the compost must be provided.
11. Details with minimum space requirements and information regarding financial obligations must be provided.
12. Each step of the composting process outlined in the attached Operation and Maintenance Manual must be followed.
13. Minimum space requirements outlined in the Operation and Maintenance Manual will be maintained.
14. Dimensions of toilet/bucket including materials, cleaning, and replacement plan outlined in the Operation and Maintenance Manual will be followed.
15. Composting bins must be labeled and dated.
16. The house must remain owner-occupied or occupied by a long-term renter of no less than 6 months and may not be used as a short-term rental (short-term guests are fine). Testing of the compost must be done after the first batch any time there is a change of occupancy. If the house is not owner-occupied, the renter must be trained by the owner, which training shall be documented in the log described in paragraph 21 below.
17. The buckets and the lids for collecting human waste in the bathroom and transferring the waste to the compost bins must be labeled to avoid being used for any other purposes.
18. Only the type of buckets and lids (material, capacity, dimensions, examples of typical brand or product name) as outlined in the attached Operation and Maintenance Manual may be used.
19. Toilet seat height shall be consistent with the attached drawings.
20. The typical quantity of "carbon-rich additives" to be added to the toilet collection chamber (bucket) after each person's use will be consistent with the attached Operation and Maintenance Manual.

21. The users of the system must maintain a log that documents the following: a) any change in ownership, owners' agent, or occupancy; b) training of any new users, including who conducted the training and the date of the training; c) new user start and end dates; d) test results for each bin; e) spills or major issues with the system and how those issues were remediated; f) the date each bin was filled and changed; g) the date the bin was distributed; and h) the location where the compost from the bin was distributed.
22. For multifamily applications, there must be information regarding who would be checking and dumping the toilet.
23. There must be evidence that the urine diversion system meets the We-Stand requirements, including pictures of tanks and information regarding the treatment (pasteurization or other method) and time limit of that treatment.
24. Urine must be collected from a dry urinal at a depot (urination station), which is collected and transferred to the larger sequestration tanks for six months prior to use.
25. For multi-family systems, it must be demonstrated that the system can handle the volume of expected waste, including compost processor capacity.
26. No bulk storage of the waste is allowed within the dwelling units.
27. There must be a sump pump and urine processing details that includes what systems will be used, site-specific data, and calculations on production and processing.

Final Committee Recommendation:

Based on these findings, the Alternative Technology Advisory Committee recommends approval of the use of this technology for residential or commercial purposes.

Please note: The Bureau of Development Services and the Administrative Appeal Board are not bound by the recommendations of the Committee. A favorable recommendation of a technology by the Committee does not guarantee approval of a building code appeal.

Further instructions for the applicant:

You may submit your plumbing code appeal to use this technology in a site-specific project at any time by following the instructions found on the BDS website. A plumbing code appeal must be approved by BDS to be able to use this technology in a project. Please submit a copy of this Committee recommendation with your appeal application. Please contact the Appeal Board Secretary at (503) 823-7335 if you have any additional questions about the appeal process.