

# Urine diverting dry toilet with cartridge and storage tank

**This document provides guidance for the operation and maintenance (O&M) of a urine diverting dry toilet for disposal using a cartridge and a storage tank.**

Guidance for typical O&M activities is provided in Table 1 with suggested frequencies for each activity. These activities are important for maintaining a urine diverting dry toilet in a good working condition.

Table 2 lists potential issues associated with a urine diverting dry toilet and provides suggested corrective actions.

## I. OPERATION AND MAINTENANCE

Operation and maintenance of an individual household urine diverting dry toilet with a cartridge and storage tank is typically arranged by the users themselves; larger repairs may require skilled labour, which may be provided by local craftsmen.

**Table 1. Operation and maintenance schedule guidance<sup>a</sup>**

Frequency	Activity
Daily	<ul style="list-style-type: none"> <li>Inspect and clean the toilet pan or pedestal, clear squat-hole if blocked</li> <li>Check sufficiency of anal cleansing facilities, repair/replace as necessary</li> <li>Check the handwashing facilities, repair/replace as necessary</li> <li>Check toilet is accessible for all intended users, e.g. access is clear and handrails (if fitted) are not loose</li> </ul>
1 to 3 times per year	<ul style="list-style-type: none"> <li>Inspect and repair the toilet pan or pedestal, and cover slab checking for cracks, damage and leaks</li> <li>Inspect and repair the superstructure, checking for cracks, damage and leaks</li> <li>Inspect and repair/replace the squat-hole lid and/or ventilation pipe with fly screen</li> <li>Check that the door, lock and light is working, repair/replace as necessary</li> <li>Comply with national standard specifications for emptying the container/pit/septic tank whenever available.</li> </ul>
As the need arises	<ul style="list-style-type: none"> <li>Carry out repairs and replace parts</li> <li>Arrange emptying and transport of the cartridge and storage tank contents to treatment</li> </ul>

### Notes:

- The suggested frequencies in Table 1 represent a minimum requirement and may need to be increased depending on the local context.
- Only persons with relevant training/skills should undertake the activities in Table 1. Care should be taken when handling disinfection products or undertaking any activity that requires entry into a pit (e.g. inspection, maintenance etc.).
- For guidance on appropriate frequencies for monitoring refer to *WHO Guidelines for Sanitation and Health*.

<sup>a</sup> Adapted from: Brikké, F. and Bredero, M. (2003). *Linking technology choice with operation and maintenance in the context of community water supply and sanitation: A reference document for planners and project staff*. World Health Organization, Geneva.

II. ISSUES AND REMEDIAL ACTIONS

Table 2. Common issues associated with a urine diverting dry toilet with a cartridge and storage tank, and suggested remedial actions

	Risk	Remedial action
<b>TOILET</b>	Access route to the toilet is blocked or not manageable for some intended users	<ul style="list-style-type: none"> <li>Clear the access route and/or carry out repairs/ improvements so that the toilet is accessible for all intended users (e.g. fitting a handrail or building an access ramp).</li> </ul>
	The toilet superstructure is damaged or absent	<ul style="list-style-type: none"> <li>Repair or replace the superstructure so that it provides privacy for the intended users, prevents ingress of rainwater, and prevents animals, rodents and insects from entering the toilet room and/or pit.</li> <li>To provide security for the users: repair or replace the door and lock, repair or replace the light inside the toilet room.</li> </ul>
	Toilet is dirty with visible excreta on the surface	<ul style="list-style-type: none"> <li>Clean the toilet pan or pedestal and the surfaces of the toilet room (e.g. bathroom, washroom, rest room, cubicle etc.) so that they are clean and free of excreta.</li> </ul>
	No anal cleansing material or inappropriate for the type of technology/system	<ul style="list-style-type: none"> <li>Replace and/or provide sufficient appropriate material.</li> <li>Ensure that where required there is a receptacle for disposal of used anal cleansing products and menstrual products, and that this is regularly emptied, and the contents is disposed of safely.</li> </ul>
	Handwashing facilities absent inside or next to the toilet	<ul style="list-style-type: none"> <li>Replace and/or provide sufficient, appropriate handwashing facilities. This includes water and soap.</li> </ul>
	Flies can easily enter and leave the pit	<ul style="list-style-type: none"> <li>The seat/pedestal or pan/squat-hole should include a U-bend containing water to create a water seal which helps reducing smell and prevent disease carrying vectors (e.g. flies) from entering and leaving the pit.</li> <li>The toilet may also be fitted with a vent piped and a screen.</li> </ul>
	Excreta overflowing from the squat hole, pan or pedestal; and/or are there ponds of effluent visible on the ground outside the toilet	<ul style="list-style-type: none"> <li>Clear any blockages and check for any cartridge damage, cracks and leaks.</li> <li>If the cartridge is full, arrange the removal of the full cartridge and replacement with an empty cartridge.</li> </ul>

<b>CONTAINMENT</b>	Pit poorly maintained such that the cover slab is cracked or damaged, and/or the side walls are not stable	NA
	Bottom of the pit less than 1.5m* from the water table where groundwater supply is used for drinking	NA
	Toilet and pit located within 15m* of a well or hand-pump that is used for drinking	NA
	Pit/septic tank located on higher ground from the drinking water source	NA
	Effluent flowing from the tank outlet to an open drain, water body or to open ground	NA
	Toilet and cartridges poorly maintained with broken components, visible cracks or defects in the side walls	<ul style="list-style-type: none"> <li>Consider what remedial actions should be taken to minimize the risk to public health (repair/replacement of broken components, operation and maintenance)</li> </ul>
	Container/pit/septic tank not accessible for emptying	<ul style="list-style-type: none"> <li>Consider what remedial actions should be taken to minimize the risk to public health.</li> <li>Consider appropriate steps to eliminate the hazard in the long term.</li> </ul>
	The container is almost full	<ul style="list-style-type: none"> <li>Ensure the waste is managed following safe practices.</li> </ul>

