

## OUTDOOR TOILETS - PRIVIES

### Definition

From MN Rules Chapter 7080.1100, Subp. 62, a privy is an above ground structure with an underground cavity meeting the requirements of part 7080.2280 that is used for the storage or treatment and dispersal of toilet wastes, excluding water for flushing and graywater. A privy also means a non-dwelling structure containing a toilet waste treatment device.

Outhouses are sometimes also referred to as a pit toilet defined by the Consortium of Institutes for Decentralized Wastewater Treatment (CIDWT) as a self-contained waterless toilet used for disposal of non-water carried human waste consisting of a shelter built above a pit in the ground into which human waste falls.

### Rule Requirements

The use of privies is allowed by the provisions of Chapter 7080.2280, Subp. 2). If the pit has an earth bottom, this point should be at least three feet above saturated soil conditions. If this separation distance cannot be achieved in the location of the privy, then the pit should be liquid-tight, with the wastes periodically removed by someone who services septic tanks. The privy should be securely attached to the ground or to the tank used for the pit.

According to MN Rules Chapter 7080.2280, to qualify as a privy, a system must meet the general technical requirements for all systems covered in 7080.2150, Subp. 2

However, per Carlton County Subsurface Sewage Treatment System Ordinance #30 Article 5, Section 2, Subdivision F, privies that meet all of the following criteria are not required to follow vertical separation and vault guidelines depicted in MN State rules 7080.2150 and 7080.2280. A zoning permit is required for all privies.

1. The privy is in a remote area with a minimum of 20 acres of lot area.
2. The privy is used on a limited seasonal basis.
3. The dwelling is served by hand carried water.
4. The privy is not within a floodplain.
5. The privy is not within a shoreland.
6. The privy is not on a hydric soil as indicated in the Carlton County Soil Survey.
7. The privy is not in a wetland as indicated on the National Wetland Inventory Map.
8. The privy shall be at least 100' from any existing well.
9. When the waste in the pit reaches a point that it is one foot below the natural ground surface, the pit shall be properly abandoned.

### Design and Setbacks

Suggested specifications for the outer portion of an outhouse are provided in Figures 7.39 and 7.40 (see below). MN Rules Chapter 7080.2280 outlines requirements for the proper application of a privy. There are two options for the design of a privy:

1. A pit can be dug that meets the 3 foot separation requirement. This means that the soil beneath the bottom of the pit that meets or exceeds the requirements of part 7080.2150, Subp. 3 (C). Pits or vaults must have sufficient capacity for the dwelling they serve, but must have at least 25 cubic feet of capacity. The sides of the pit must be curbed to prevent cave in (MN Rules Chapter 7080.2280, Items B and C). The pit must meet all the same setbacks as any soil treatment system.

2. A watertight holding tank meeting applicable requirements of parts 7080.1900 to 7080.2030 can be used instead of a pit. This tank must meet the same setbacks as septic tanks.

### *Ventilation*

From MN Rules Chapter 7080.2280 (E), privies must be adequately vented. To minimize odors in the upper part of the privy a vent should extend from the underside of the seat board through the roof or up to a horizontal vent open to the sides of the toilet. The vent must be flush with the underside of the seat board and must not extend down into the pit. Gases which cause odors are lighter than air, and if the vent extends down below the seat board, these gasses will collect under the seat board to be released upward into the privy when the seat cover is opened. At the top of the privy there should be a screened opening on each side or, preferably, all the way around the top to allow air to pass through and carry away any odors which may seep into the upper part of the structure.

From MN Rules Chapter 7080.2280, (D), the privy must be easily maintained and insect proof. The door and seat must be self-closing. All exterior openings, including vent openings, shall be screened. All vent openings to the outside should be properly screened to keep out insects. Insect-proof openings should be placed in the walls below the seat.

The opening in the seat board must have a tight-fitting cover. The type of seat and cover used on a flush toilet is not satisfactory unless weather stripping is added. The cover should be kept in place when the privy is not in use, and can be hinged to close automatically.

A tight-fitting door, preferably with a self-closing feature, such as a spring, should be used to minimize the number of insects that get into the privy. (A crescent-shaped window, also screened, may be cut into the door so that the utility of the structure will be recognized.)

### **Operation and Maintenance**

According to MN Rules Chapter 7080.2450, Subp. 4 (B), when the privy is filled to one half of its capacity, the solids must be removed. Abandoned pits must have the sewage solids and contaminated soil removed and must be filled with clean earth and slightly mounded to allow for settling. Removed solids shall be disposed of properly.

### *Odor Control*

A number of products on the market claim to minimize odors in a sanitary privy. One that is reasonably effective is hydrated lime. Associated compounds containing the same chemical are slaked lime, quicklime, hot lime, chloride of lime, and pebbled lime.

Approximately one cup of hydrated lime sprinkled over the solids in the pit will minimize odors and aid in decomposition. As the odors again become objectionable, another cup of lime should be added. Excess amounts of hydrated lime will retard decomposition, however, rather than promote it, although the generation of odors will be inhibited. Caution should be used to keep the hydrated lime dust out of eyes and nostrils.

Commercial compounds are available and may be tried by the individual owner in order to determine their effectiveness. Some of them are odor suppressants while others change the bacterial environment within the pit.

### *Keeping wood odor-free*

Any odors which in the past have risen into the structure of an old privy have probably become entrapped in the pores of the wood. To remove these odors, make a solution of disinfectant and tri-sodium phosphate, and scrub the inside walls and all other inside surfaces of the privy. This solution will remove odors from the pores of the wood. After the wood has dried, paint the inside of the privy with a polyurethane compound to prevent any additional odors from penetrating the wood.

These techniques should minimize the odor that collects in the structure of a sanitary privy. Proper air circulation can be very helpful in carrying away any odors, so proper venting of the structure is absolutely essential.

Even though bacteria are decomposing the organic waste, there will be some residue remaining. This residue will gradually build up until it must either be removed or the structure moved to a new location. Usually the solids can be removed by a septic tank Maintainer or someone with equipment to perform the task in a sanitary manner. The frequency of solids removal will depend upon the size of the pit and the amount of use.

## Troubleshooting

### Odors

An outdoor toilet can be kept relatively odor-free and can be constructed for year-round use. But while an outdoor toilet is the least costly alternative to a flush toilet, it may be the least desirable alternative for a residence in a northern climate.

An improperly constructed and maintained privy can be an abomination to both eyes and nose. Several methods can be used to minimize the sanitary privy odor problem caused by decomposition of the organic matter in the pit:

- Use chemical compounds to change the bacterial action to reduce odor generation.
- Vent both the pit and the upper part of the structure.
- Place tight-fitting covers on the seat openings.
- Finally, the inside of the structure should be painted with a polyurethane-type paint to minimize the penetration of odors into the wood.

## Inspection

When an existing privy is being inspected it is either evaluated as a soil treatment system needed to meet the two to three foot separation or as a holding tank which needs to be watertight. See the tank inspection portion of Section 7 or the inspection criteria identified in Section 12 of the Manual for Septic System Professionals in Minnesota for ensuring appropriate vertical separation.

## Abandonment

The abandonment of a privy is a relatively simple procedure. If a soil pit was used all liquid should be removed and the pit filled with granular material. If a holding tank is being abandoned it should follow the septic tank abandonment procedures discussed previously in this section of the manual.

FIGURE 7.39 Privy Specs: Flat View

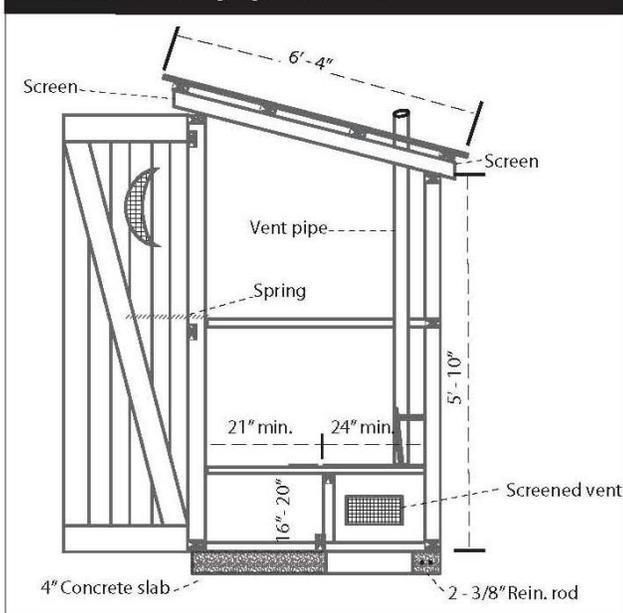


FIGURE 7.40 Privy Specs: Isometric View

