

# BERGER BIOTECHNIK GmbH

Sustainable Systems and Products for on site  
Biological Waste Treatment, Ecological  
Sanitation and Water Saving

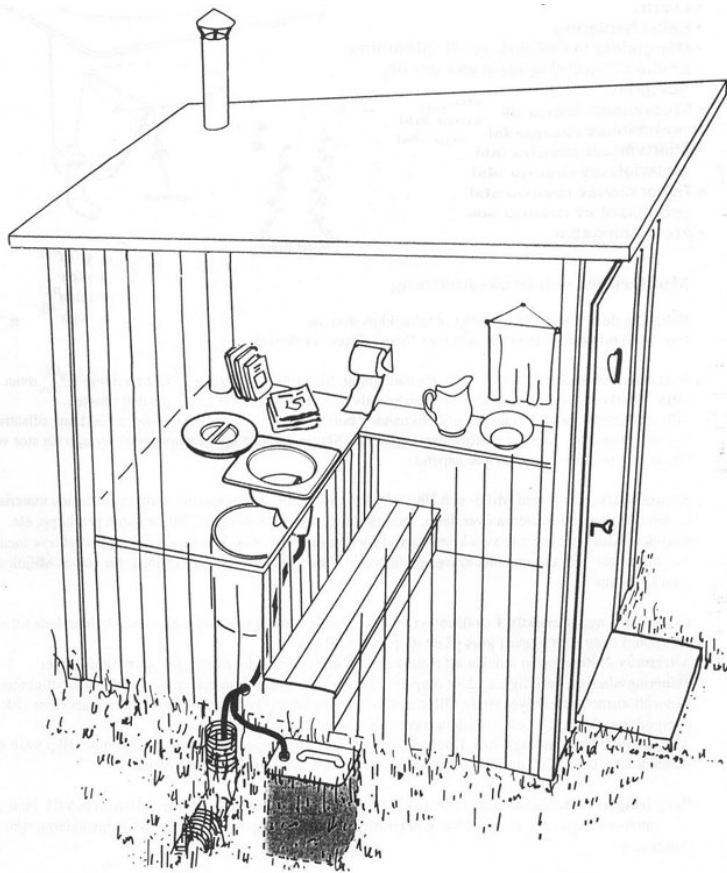
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Act ecologically:

## **The SEP Urine Separation Insert for Biological Dry Toilets**

A simple toilet system to collect urine and faeces  
separately at outdoor toilets, summerhouses and huts



- enables economic utilisation of high nutritious urine
- contains valuable plant nutrients like nitrogen and phosphorus
- reduces the liquid and nutrient amount at faeces composting
- allows drying of faeces
- improves sanitation
- easy installation

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## The SEP Urine Separation Insert

### 1. Function

At proper kidney function, human urine is aseptic and a valuable carrier of nutrients. The SEP Urinal Separation Insert separates the urine easily, using a bowl-like device in the front half with a discharge and an opening for solids at the back half. Thus, pure urine mixed with water 1:8 can be utilized as a fertilizer for plants to save common fertilizers.

The solids (faeces, toilet paper) either fall into an exchangeable container to be dried or composted afterwards or directly into a composting system. In both cases after each use, the solid waste is covered with bark chips or chaff. After a one year rotting period, the content is ready to be disposed on ornamental flowerbeds in the garden.

### 2. Range of applications

By its design, the SEP Urine Separation Insert fits with many of the commercial dry toilets as a supplement, but can also be integrated in self built units to optimize composting conditions, where high amounts of liquids arise and throughout places, where urine is needed as a fertilizer.

### 3. Building conditions

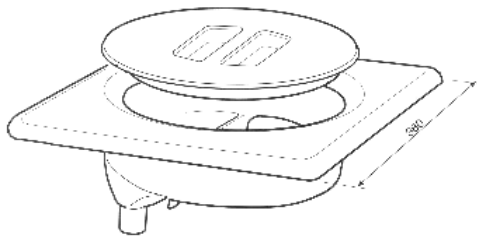
The SEP Urinal Separation Insert may be adapted to existing dry toilets or in adequate toilet openings on sitting platforms. The urine can be collected directly in a storage tank underneath or in a tank positioned outside like a mobile tank, jerry can or a subterranean storage tank. A ventilation pipe leading above the roof is necessary.

### 4. Plumbing

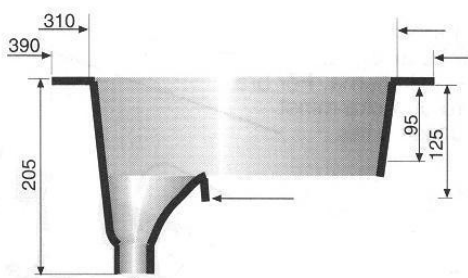
The discharge of the urinal is connected to a 1¼"-tube (d=32mm) or a pipe to any collecting tank. We recommend to increase the pipe diameter with the length of transport. The container for solids should be connected to a ventilation system, by, for example, taking advantage of natural draft by a vertical exhaust pipe >d=100 mm leading above the roof, which can be enforced by a wind driven fan (available on request). This creates a trap and improves evaporation respectively drying of faeces.

### 5. Operation and maintenance

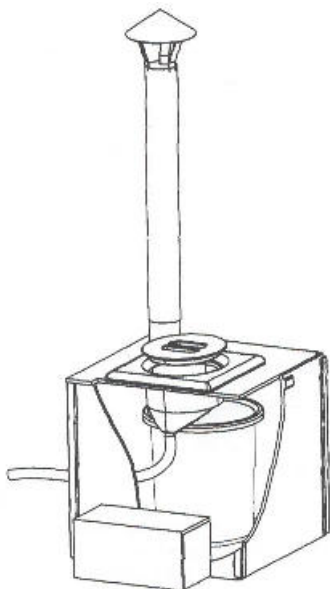
The SEP Urinal Separation Insert can only be used while sitting (simple dry urinals are available). The insert is made of polyethylene-plastic and is very easy to clean. The tube or pipe, leading to the urine tank has to be cleaned if necessary. An expanded hygienic measurement from remaining germs in the urine can be achieved by a 6 month resting period before using it as a fertilizer.



SEP Urine Separation Insert with seat



Measures/width of the SEP-Insert



Toilet with urine tank and bucket

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