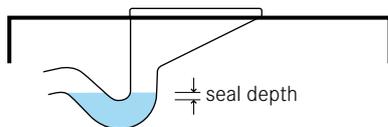
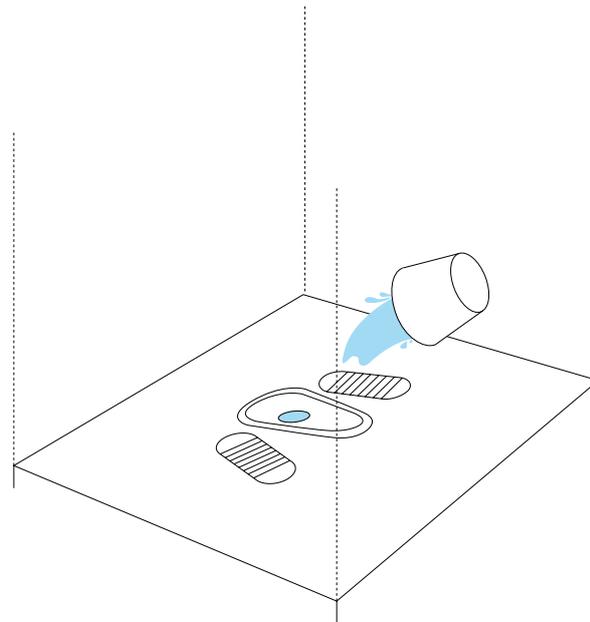
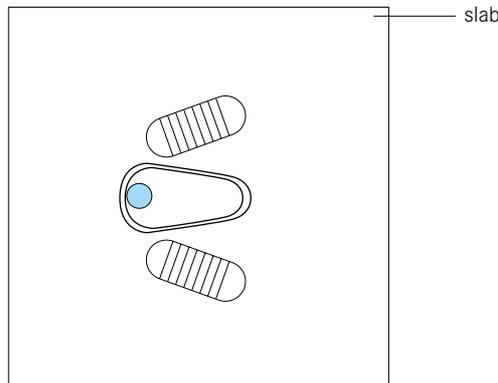


Inputs:  Faeces  Urine  Flushwater
( Anal Cleansing Water)( Dry Cleansing Materials)

Outputs:  Blackwater



A pour flush toilet is like a regular Cistern Flush Toilet (U.5) except that the water is poured in by the user, instead of coming from the cistern above. When the water supply is not continuous, any Cistern Flush Toilet can become a pour flush toilet.

Just like a Cistern Flush Toilet, the pour flush toilet has a water seal that prevents odours and flies from coming back up the pipe. Water is poured into the bowl to flush the toilet of excreta; approximately 2 to 3 L is usually sufficient. The quantity of water and the force of the water (pouring from a height often helps) must be sufficient to move the excreta up and over the curved water seal.

Both pedestals and squatting pans can be used in the pour flush mode. Due to demand, local manufacturers have become increasingly efficient at mass-producing affordable pour flush toilets and pans.

Design Considerations The water seal at the bottom of the pour flush toilet or pan should have a slope of at least 25°. Water seals should be made out of plastic or ceramic to prevent clogs and to make cleaning easier (concrete may clog more easily if it is rough or textured).

The S-shape of the water seal determines how much water is needed for flushing. The optimal depth of the water seal head is approximately 2 cm to minimize the water required to flush the excreta. The trap should be approximately 7 cm in diameter.

Appropriateness The pour flush toilet is appropriate for those who sit or squat (pedestal or slab), as well as for those who cleanse with water. Yet, it is only appropriate when there is a constant supply of water available. The pour flush toilet requires (much) less water than a traditional Cistern Flush Toilet. However, because a smaller amount of water is used, the pour flush toilet may clog more easily and, thus, require more maintenance.

If water is available, this type of toilet is appropriate for both public and private applications.

Health Aspects/Acceptance The pour flush toilet (or squatting pan) prevents users from seeing or smelling the excreta of previous users. Thus, it is generally well accepted. Provided that the water seal is working well, there should be almost no odours and the toilet should be clean and comfortable to use.

Operation & Maintenance Because there are no mechanical parts, pour flush toilets are quite robust and rarely require repair. Despite the fact that it is a water-based toilet, it should be cleaned regularly to maintain hygiene and prevent the buildup of stains. To reduce water requirements for flushing and to prevent clogging, it is recommended that dry cleansing materials and products used for menstrual hygiene be collected separately and not flushed down the toilet.

Pros & Cons

- + The water seal effectively prevents odours
- + The excreta of one user are flushed away before the next user arrives
- + Suitable for all types of users (sitters, squatters, washers, wipers)
- + Low capital costs; operating costs depend on the price of water
- Requires a constant source of water (can be recycled water and/or collected rainwater)
- Requires materials and skills for production that are not available everywhere
- Coarse dry cleansing materials may clog the water seal

References & Further Reading

- Mara, D. D. (1985). *The Design of Pour-Flush Latrines*. UNDP Interregional Project INT/81/047, The World Bank and UNDP, Washington, D.C., US.
Available at: documents.worldbank.org/curated/en/home
- Mara, D. D. (1996). *Low-Cost Urban Sanitation*. Wiley, Chichester, UK.
(Provides detailed drawings of Indian glass-fibre squat pan and trap with dimensions and critical design criteria. A description of how to modify a pour flush toilet to a cistern flush toilet is included.)
- Roy, A. K., Chatterjee, P. K., Gupta, K. N., Khare, S. T., Rau, B. B. and Singh, R. S. (1984). *Manual on the Design, Construction and Maintenance of Low-Cost Pour-Flush Waterseal Latrines in India*. UNDP Interregional Project INT/81/047, The World Bank and UNDP, Washington, D.C., US.
Available at: documents.worldbank.org/curated/en/home
(Provides specifications for pour flush toilets and connections)