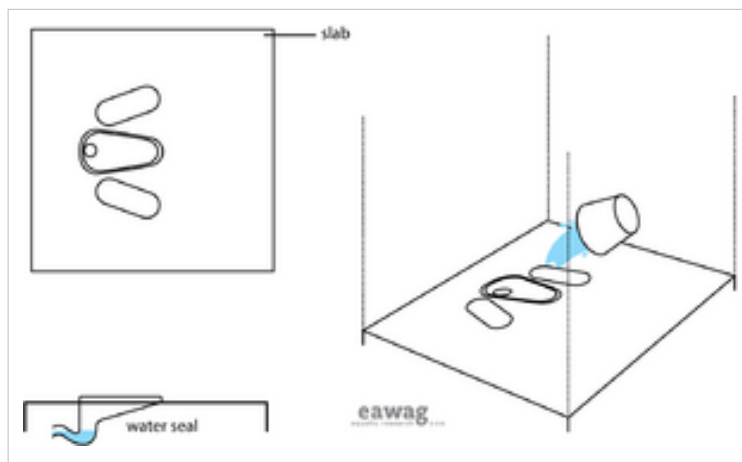


Pour_Flush_Toilet

Applicable to systems:	Languages / langues / idiomas
1, 3, 5, 6, 7	  

Inputs: Urine , Faeces , Flushwater , Anal cleansing water

Outputs: Blackwater



A Pour Flush Toilet is like a regular Flush Toilet except that instead of the water coming from the cistern above, it is poured in by the user. When the water supply is not continuous, any cistern Flush Toilet can become a Pour Flush Toilet.

Just like a traditional Flush Toilet, there is 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 3L 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. Toilets can be made from plastic and ceramic, or from galvanized sheet metal.

The S-shape of the water seal determines how much water is needed for flushing. To reduce water requirements, it is advisable to collect toilet paper or other dry cleansing materials separately.

The waterseal at the bottom of the Pour Flush Toilet or pan should have a slope of 25 to 30°. 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 optimal depth of the water seal is approximately 2cm to minimize the water required to flush the excreta. The trap should be approximately 7cm in diameter.



Advantages	Disadvantages/limitations
<ul style="list-style-type: none"> - 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, wipers and washers) - Low capital costs; operating costs depend on the price of water 	<ul style="list-style-type: none"> - Requires a constant source of water (can be recycled water and/or collected rain water) -The U-trap can easily become blocked - Requires some education to be used correctly -Pathogens are mixed with water and thus spread over a relatively large volume

Adequacy

The water seal is effective at preventing odours and it is appropriate for those who sit or squat (pedestal or slab) as well as those who cleanse with water. It is only appropriate when there is a constant supply of water available, and where the infrastructure is available or can be built to manage waste water.

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. Pour Flush Toilets are adequate for almost all climates.

Pour Flush Toilets are especially appropriate in densely populated areas where dry handling of excreta isn't socio-cultural appropriate.

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 no odours and the toilet should be clean and comfortable to use.

Maintenance

Because there are no mechanical parts, Pour Flush Toilets are quite robust and rarely require repair.

Despite the fact that water is used continuously in the toilet, it should be cleaned regularly to prevent the build up of organics and or/stains.

To prevent clogging of the Pour Flush Toilet, it is recommended that dry cleansing materials be collected separately and not flushed down the toilet.

Acknowledgements

The material on this page was adapted from: Tilley, E. et al. (2008). Compendium of Sanitation Systems and Technologies ^[2], published by Sandec ^[3], the Department of Water and Sanitation in Developing Countries of Eawag ^[4], the Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland. The publication is available in English, French, and will be made available in Spanish. Available in the IRC Digital Library ^[5]

References and external links

- Mara, DD. (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, AK., et al. (1984). Manual on the Design, Construction and Maintenance of Low-Cost Pour Flush Waterseal Latrines in India (UNDP Interreg. Project INT/81/047). The World Bank + UNDP, Washington.(Provides specifications for Pour Flush Toilets and connections.). Available in the IRC Digital Library, [6].



References

- [1] http://www.eawag.ch/organisation/abteilungen/sandec/publikationen/compendium_e/index_EN
 - [2] http://www.eawag.ch/organisation/abteilungen/sandec/publikationen/publications_sesp/downloads_sesp/compendium_high.pdf
 - [3] http://www.eawag.ch/organisation/abteilungen/sandec/index_EN
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 - [5] <http://www.irc.nl/docsearch/title/163208>
 - [6] <http://www.irc.nl/docsearch/title/108815>
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