



PET bottles water reservoir + funnels

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updated 10. 1. 2023 | published 10. 1. 2023

Summary

PET bottles water reservoir + funnels



2.77 hrs



4 pcs



0.20 mm



0.40 mm



PET



25 g

Prusa
MK3/S/S+[Household](#) > [Outdoor & Garden](#)Tags: [funnel](#) [petbottle](#) [sieve](#) [waterer](#)

It is underground water reservoir for plants. I have been using a similar solution for years.

But previously i have used hot glue with real funnel ;-)

Now i have 3d printer so i have designed fast to print and cheap version, all in one.

It looks like long to print but it only takes **2h 46** minutes and prints **without supports** :)

You can utilise multiple bottles in this way. Even if installation will be abandoned, PET bottle is already in the best for biodegrade position, in the soil.

As it is March and the ground is hard, I do not have pictures of this new solution to show from real installation, but tested at home with attached pipe and bottle, see photo :)

If someone is not interested in water reservoir i have attached also simple PET bottle funnel, universal for any task with PET bottle. Were created as a simplification of the main model, so with same tight thread.

Files

WaterReservoirWithPetBottle - for underground water reservoir, attache bottle and 25mm diameter water pipe to it.

PET_Funnel - use it for any purpose especially for loose substances, it is universal PET bottle funnel. Print one to easier put soil to all bottles of water reservoir.

PET_FunnelTaperingCavity - use it for any purpose, it is universal PET bottle funnel. It contain additional tapering cavity at the bottom near the thread, so better for water and other liquids then **PET_Funnel**.

PET_FunnelWithSieve - use it for any purpose, it is universal PET bottle funnel.

Photo with white barrel is not mine, attached only to show the installation concept.

Printing

Print without supports and brims :) Probably any material PLA, PETG, ABS, ASA. The cheapest the better :) Tested only with PETG.

Settings not critical but 3 perimeters must be.

How it's working

Dig a hole in the ground. Pour the excavated soil into the PET bottle so that it is not empty (**PET_Funnel** can help here).

Attache printed "WaterReservoirWithPetBottle" to the PET bottle, the thread is tight. Attache 25 mm diameter water pipe, the catch is also quite tight. Connect all bottles with water pipes and connect main water pipe to the barrel. I use one bottle every 1.5 meter.

Top of the funnel should be 15-25 cm underground.

When the rain fall, water go into the barrel and into all bottles underground.

During days without rain the water evaporates slowly, as it is in the bottle with soil.

For me no problem at all for 2 weeks without rain :) Previously, I had to water every day.

2 weeks are average and depend of temperature, humidity and bottle capacity used.

Why a funnel and a strainer? Funnel prevent water to go to high (out of system when filling from barrel), first water must go to the bottle. Sieve is only to prevent underground animals to go inside like mouse or mole.

Do not use to close to trees because the tree's roots are too big and can damage the system.

Cost

Whole installation is cheep. One printed item cost 1/2 euro, 2-3 metters of 25 mm diameter water pipe cost 1 euro. If no rain for long time, fill barrel from other water source every ~7 days, You will get self irrigation system :).

UPDATE

Uploaded fixed model for PET_FunnelWithSieve (wider wall for sieve).

Uploaded photo with installation concept.

Fixed rounding in **PET_Funnel** and **PET_FunnelWithSieve**

Added separate model for **PET_FunnelTaperingCavity**

Model files





waterreservoirwithpetbottle.3mf



PET_Funnel

2 files



pet_funnel.stl



pet_funnel.3mf



PET_FunnelTaperingCavity

2 files



pet_funnel taperingcavity.stl



pet_funnel taperingcavity.3mf



PET_FunnelWithSieve

2 files



pet_funnelwithsieve.stl



pet_funnelwithsieve.3mf

Print files



WaterReservoirWithPetBottle

1 file



waterreservoirwithpetbottle_02mm_petg_mk3s_2h46.gcode

PET 0.40 mm 0.20 mm 2.77 hrs 25 g Prusa MK3/S/S+



PET_Funnel

1 file



pet_funnel_02mm_petg_mk3s_2h21m.gcode

PET 0.40 mm 0.20 mm 2.36 hrs 23 g Prusa MK3/S/S+



PET_FunnelTaperingCavity

1 file



pet_funneltaperingcavity_02mm_petg_mk3s_2h24m.gcode

PET 0.40 mm 0.20 mm 2.40 hrs 24 g Prusa MK3/S/S+



PET_FunnelWithSieve

1 file



pet_funnelwithsieve_02mm_petg_mk3s_2h32m.gcode

PET 0.40 mm 0.20 mm 2.53 hrs 24 g Prusa MK3/S/S+

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