



Rainwater Collection for Domestic Use

Rainwater harvesting is one of the easiest methods for homeowners to decrease their share of public water use and reduce their own water utility bills. By collecting rainwater from rooftops, patios, and other sources on one's property, homeowners can allow themselves access to a free, sustainable source of water. Rainwater is most commonly used for landscape irrigation; however, if treated properly it can also be used domestically. When installing and using a filtration system to clean rainwater for domestic use, it is imperative that the equipment be maintained and that water quality is regularly tested.

Rainwater treatment

Rainwater is often pure; however atmospheric pollutants as well as rooftop contaminants (dust/dirt, bird droppings, etc) can taint the rainwater. Because of these threats, all rainwater collected for domestic use must be properly treated to ensure safety. A proper rainwater treatment system should include:

Pre-storage – the following measures clean the water before it reaches the storage tank

Leaf screens – these screens, placed in the gutters and/or downspouts keep leaves and other large objects from flowing into the storage tank with the rainwater. These must be cleaned periodically to maintain efficiency and prevent system clogs.

First-flush diverter – the first five gallons of runoff pick up most of the contaminants (dust, dirt, bird droppings, etc); a first-flush device ensures that this polluted water does not make it into the storage tank. Standpipes, which must fill to capacity before any water can pass, are the most common first-flush devices.

Roof washers – filters placed just before the entrance to the storage tank, remove smaller debris that passed through the leaf screens.¹

Post-storage – the following measures clean the water after it leaves the storage tank

Sediment filter – two sediment filters, a 5-micron fiber cartridge followed by a 3-micron charcoal cartridge, should be installed after the pressure tank or pump.

These filters remove sediment, dust, microscopic particles, and organic molecules. The filters must be changed on a regular basis.

Reverse osmosis – reverse osmosis forces the rainwater through a permeable membrane filter. This process removes dissolved solids and salts from the water. The membrane filter must be changed periodically.²

UV light – after filtration, the water should be treated with a UV light to kill any remaining bacteria or other contaminants. Typically, a lamp rated at 12 gallons per minute is sufficient; however, research your system size to make sure you have installed an adequate UV light.³

¹Texas Water Development Board (2005), *The Texas Manual of Rainwater Harvesting*, pp 7-10.

²Texas Water Development Board (2005), pp 18-19.

³Texas Water Development Board (2005), p 18.



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