

Tips for Proper Maintenance and Disinfection of Cisterns and Wells

Cisterns are contained water supplies for homes without access to a public water source. Homes with cisterns usually collect water from the roof or purchase water from a water hauler. Unfortunately due to the very nature of cisterns and wells, they can become a breeding ground for bacteria and collectors of unwanted contamination. For these reasons it is highly recommended that cisterns and wells be properly maintained using the following methods to inhibit and/or retard contamination:

Examination, Preventive Maintenance and Cleaning of Cisterns – Periodically examine cisterns for cracks and foreign items, which might cause contamination. A good time to do this is just before a shipment of water is received or when a foul taste or odor is detected. A cistern that collects water from the roof should have gutter guards installed to prevent leaf litter from entering. Also, it is recommended to turn the downspouts away to divert rainwater for the first few minutes in order to wash the roof and prevent contamination by dirt and bird droppings. Cisterns should be drained and washed down with a weak bleach solution every two years. Proper ventilation is necessary when washing down a cistern. Invoke the “buddy system” of using two people to clean the cistern: one to stay on top to insure the ventilation system is working properly and the other to enter and clean the cistern. Cracks should be repaired and permitted to cure before any new water is added. Commercial products are available to seal cisterns. Be sure to follow manufacturer’s instructions carefully. The cistern should then be filled and disinfected prior to consumption. **Disinfection is recommended on a monthly basis using household bleach***. (see below)

De-odorizing a Cistern – Bitter tastes or sour odors can be due to the presence of one or more of the following: bacteria, algae, tannic acid from decaying leaf litter, and/or metals contamination. Once it is determined what the cause of a sour cistern is, it is highly recommended that the cistern be drained, cleaned, and disinfected (see below). If the foul taste and odor is due to decaying leaf litter perhaps causing the water to turn the color of tea, the cistern can be de-odorized with baking soda as follows:

- Mix 2 lbs. of baking soda into 2 gallons of water to make a slurry mixture.
- Add the mixture to every 1500 gallons of water in the cistern.
- See the example below to accurately determine dosage for your cistern.

Disinfection of a Cistern can be done by adding:

- One, 8 ounce cup of household bleach* to every 1500 gallons of water in a cistern.
- See the example below to accurately determine dosage for your cistern.

Disinfection of a Well can be done by adding:

- One, 8 ounce cup of household bleach* for each 300 gallons of water using a drip chlorinator

***Household bleach:** Never use a scented bleach product for disinfection. Make sure the bleach product is 5.25% sodium hypochlorite. This should be written on the label.

Caution: Chlorine does eventually dissipate, but overdosing can cause noxious odors and tastes as well as damage laundry. If disinfecting a cistern that already has water in it, add the bleach while agitating the water with a garden hose whose water source is that of the cistern. When disinfecting an empty cistern add the same amount of bleach as outlined above, but add it to the empty cistern and allow the refill water to mix it. In both instances, allow the water to sit for 24 hours prior to consumption for proper disinfections.

Determining the Dosage in a Cistern for Baking Soda and Chlorine: Reminder: All cistern measurements must be made in feet! Use a long pole to determine the height of water currently in a cistern.

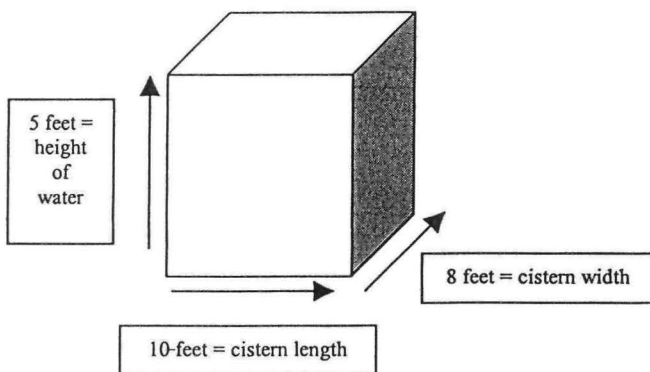
Rectangular Cistern:

Length of the cistern X width of cistern X current height of water X 7.5 = gallons of water in the cistern. Divide this figure by 1500 to get cups of bleach. Divide this figure by 1500 then multiply by 2 to get pounds of baking soda.

Circular Cistern:

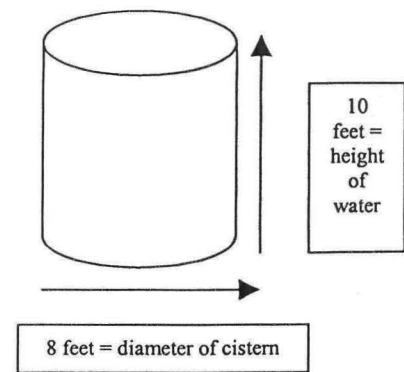
Diameter of cistern across X diameter of cistern X current height of water X .785 X 7.5 = gallons of water in the cistern. Divide this figure by 1500 to get cups of bleach. Divide this figure by 1500 then multiply by 2 to get pounds of baking soda.

Examples:



$$5 \times 10 \times 8 \times 7.5 = 3000 \text{ gallons of water}$$

3000 divided by 1500 = 2 cups of bleach
or 4 lbs of baking soda



$$8 \times 8 \times 10 \times .785 \times 7.5 = 3768 \text{ gallons of water}$$

3768 divided by 1500 = approx. 2 ½ cups of bleach
or approx. 5 lbs of baking soda