



## CONSOLIDATION OF FOUNDATIONS BY WATERING.

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### IS IT:

*Product*

*Technology*

*Equipment*

### APPLICABLE FOR:

*Restoration*

*Rehabilitation*

*New Construction*

### APPLICABLE ON:

1. *Foundations and underground structures*

2. *Vertical structures*

3. *Horizontal structures and vertical connections*

4. *Roof and terraces*

5. *Façade and building envelope*

6. *Finishes and completion elements*

7. *Integrated services*

8. *General strategies for building recovery*

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***Related companies:*** No companies; university research; structural study.

## DESCRIPTION

By making sure that the soil around your foundation doesn't get excessively dried out, you can avoid slab foundation cracks and pier and beam issues. Homes that are positioned on clay soils warrant special attention.

## WHY TO USE

To prevent:

- Cracking foundation
- Doors or windows sticking or not closing
- Exterior walls cracking such as zigzagging cracks in bricks
- Interior walls cracking such as cracks in sheetrock and cracking tiles
- Sloping counters or floors

## HOW TO USE AND APPLY

In areas where temperatures reach over 37°C (100°F), the foundations of a house should be watered every single day during the dry months. It's best to keep the clay soil around the foundation damp, but not too wet. Because too much moisture can do as much harm as not enough water. If you walk around your foundation and the ground is squishy, you're applying way too much moisture.

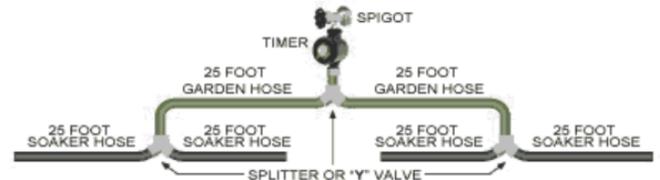
When utilizing a sprinkler system, let the system run for approximately 15-20 minutes a day. It's best to do this after the sun has gone down in order to ensure that the water doesn't evaporate too quickly. Make sure the water is not splashing directly on the house or right next to the foundation. Ideally, the water should land about 25-38 cm (10-15 in) from the foundation. The idea is to try to maintain a relatively constant level of moisture around the foundation in order to prevent it from becoming too dry or too wet.

In the event you're using a soaker hose to protect the foundation, you should water it more frequently because these types of hoses release water slowly. As a general rule, running the water for about 45 minutes to 1 hour is often enough to help protect your foundation from cracking or moving. Since all sides of the foundation can suffer damage when it's hot, you'll need to have multiple

soaker hoses. These are things that you can buy at any regular home improvement store. All things considered, they're a very inexpensive way of helping you to maintain your foundation.

### Foundation Watering Soaker Hose System

There are several ways to go. The most common is a foundation watering soaker hose system.



1. Measure the area around your house where you can lay a soaker hose.
2. Purchase enough hose to run the length measured for. You can purchase soaker hoses at any hardware / home repair store.

Also many home owners like to get a three way spigot splitter so that they can run soaker hoses in both directions around the house, leaving an extra connection for garden hoses.

Another option is a spigot timer so that you can set how long and often you would like to water the foundation.

If you use the timer with a splitter, make sure to close any openings not connected to the soaker hoses so no excess water is flowing.

- Create a shallow trench around your house that is 8 cm (3 in) deep and 15 cm (6 in) from the foundation.

Don't place the soaker hoses any closer to the house. If the soaker hose is too close to the home, when the dry soil cracks, the water can follow the cracks under your home and create additional problems.

- Connect your soaker hoses to the spigot and then lay the soaker hose down in the trench.
- Loosely cover the soaker hose using the soil loosened from creating the trench.

### Foundation Watering Schedule

Water more during hot, dry weather and less during cold, damp weather. The goal is to maintain a constant moisture level in the soil so that soil below the surface is damp – not soggy and not dry.



- Start in the dry summer months with a daily watering regime.
- With the current drought, you should water at least 2 hours a day. It is best to water at night to reduce water loss to evaporation

Use a screwdriver as a quick test to see if you need more or less water. Stick the screwdriver into the soil. Water more if it comes up dry. Water less if it comes up caked in mud.

Review the trees around the building. A single large tree can remove as much as 568 L (150 gallons) of water, or almost 0,56 m<sup>3</sup> (20 ft<sup>3</sup>) of water, from the soil each day. Shrubs and other plants can also remove large quantities of water. Roots under your foundations can cause foundation damage by drying out the soil under your foundation and causing your foundation to settle.

- Soils dry out during cold, dry months so remember to water during dry spells in the cold months.

If using a timer, adjust the timer for season changes in moisture. Remember to turn it off after a good rain or snow and then to turn it back on when it starts to dry out again.

## **TECHNICAL CHARACTERISTICS**

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N/A

## **RECOMMENDATIONS AND OTHER INFORMATION**

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About Clay Soils and Watering:

These types of soils found under foundations are well known for being expansive in nature. That means that when they get really wet, they'll puff up and get larger in volume. The reason you don't want to over water your foundation is that too much water can push it upwards. That can ultimately lead to a lot of difficulties. To be on the safe side, just keep your soil moist, but don't over do it.

## **EXAMPLES**

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See attached images at the end of this sheet.

## **REFERENCES / SOURCES AND LITERATURE**

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<https://foundationrepairs.com/foundation-maintenance/foundation-watering/>

<https://www.youtube.com/watch?v=gP53EphnnOI&t=4s>

<https://profengineering.com/foundation-watering-system/>

<https://hdfoundationrepair.com/how-often-should-i-water-my-foundation/>

<https://edensstructural.com/water-foundation/>

<https://ascelibrary.org/doi/abs/10.1061/9780784481707.023>

<https://www.scientific.net/AMM.90-93.490>

## **WEBSITE OF THE COMPANY**

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<https://foundationrepairs.com/>

<https://profengineering.com/>

<https://edensstructural.com/>



## IMAGES AND CAPTIONS

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Fig.1: Irrigation trench 20 cm (8 in) from foundation.

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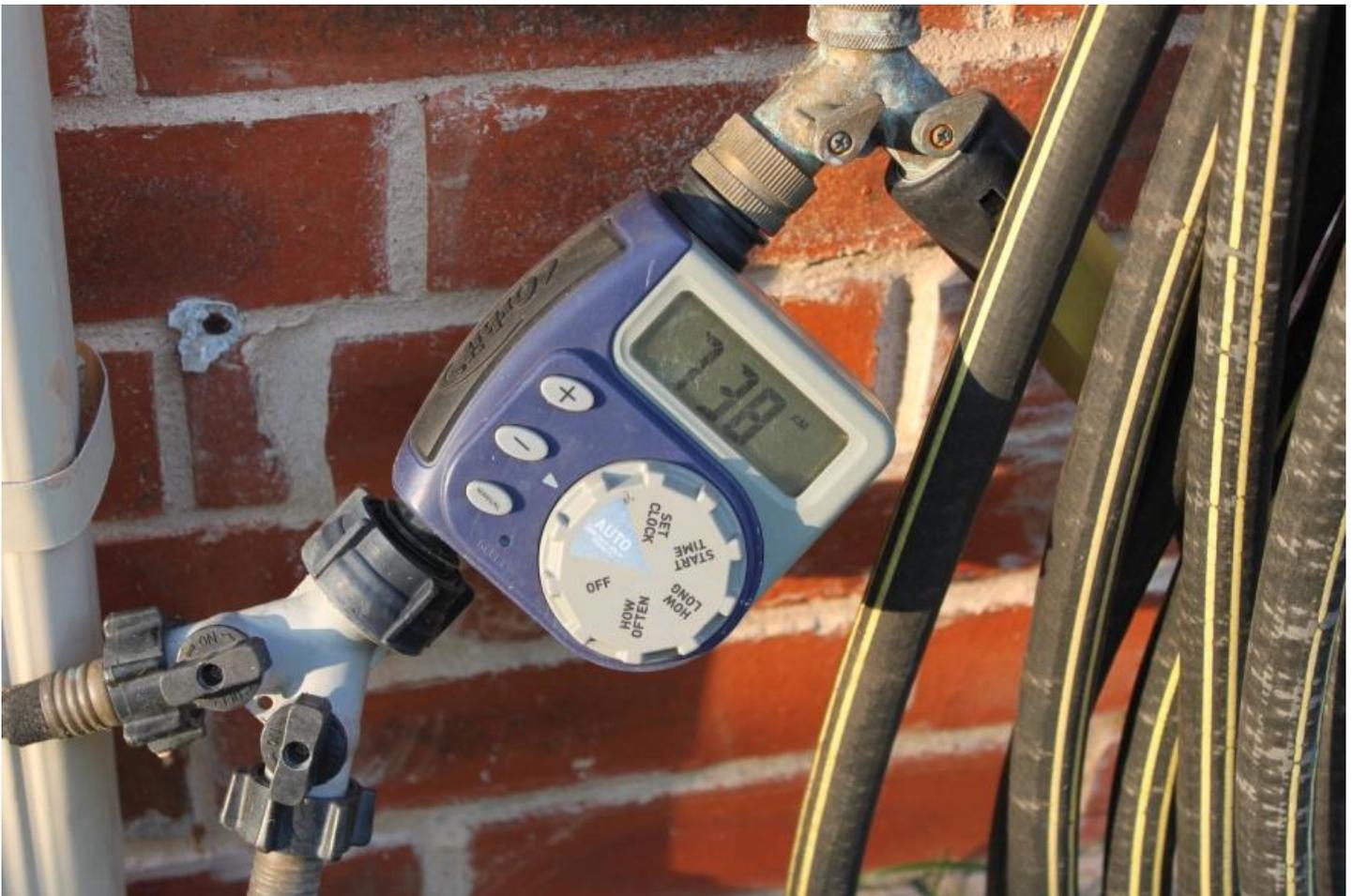


Fig.2: Soaker Hose Timer and Splitters.

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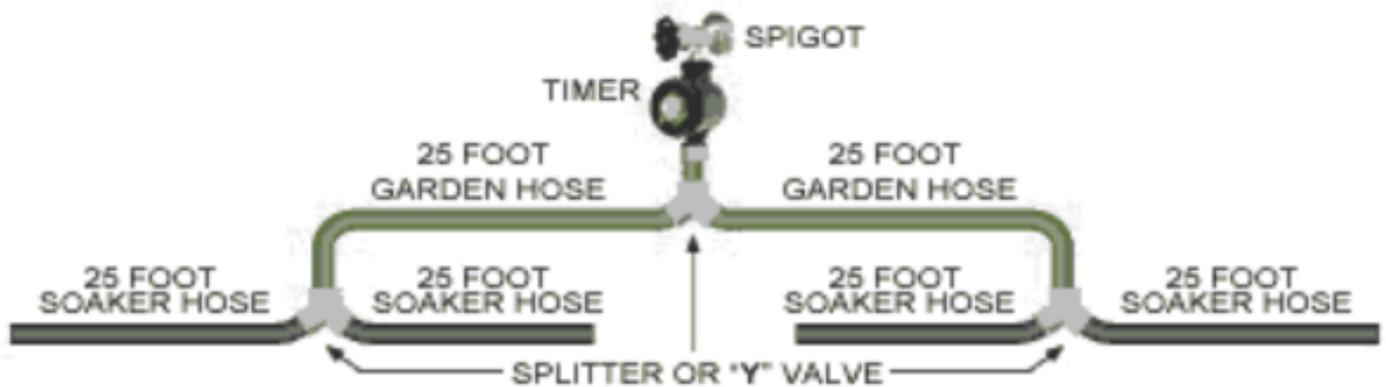


Fig.3: Foundation Watering Soaker Hose System. © ADVANCED FOUNDATION REPAIR