

HOW MUCH SHOULD I WATER MY FOUNDATION?

During the past 28 years I have identified causes and determined solutions for foundation related problems in the DFW area and the question that is asked most frequently is "How much should I water my foundation?" The problem with this questions is there is no specific answer that would be satisfactory for all homes because each home has its individually unique factors that determine when, where and how much watering will be necessary. The following variable factors will affect the amount of watering or moisture application which will be needed to maintain a constant moisture content that will reduce volumetric expansion of the supporting soils beneath your foundation.

1. Recent Rainfall
2. Vegetation
3. Drainage/Runoff
4. Direction of Structure
5. Quality of Stiffness of Foundation
6. Type of Soil your Foundation is Constructed on.

1. **Recent Rainfall:** During the usual rainy season, November through June, little or no watering may be required. From July through October every other day may be necessary to maintain ample moisture content in the soil.
2. **Vegetation:** Plants and trees need enough moisture to support their limbs, branches and leaves while their root system can extend to a distance equal to its height. Studies have shown very large trees can consume 40,000 gallons of water a year which causes drying and shrinkage of the supporting soil under your foundation. Sometimes a decision between keeping the tree or preserving you homes foundation will need to be made. Overgrown vegetation is the primary reason many foundations begin to experience significant shifting 15-20 years after their construction.
3. **Drainage/Runoff:** The steeper the slope the more moisture will run-off and very little will penetrate deep enough to hydrate the soil under your foundation. Conversely, flat or negative grade soils will accumulate excessive moisture requiring less watering at these areas. A slow watering application is recommended on a steep grade.
4. **Direction of Structure:** The south and west sides of a structure will require more moisture because of the high evaporation rate due to the hot afternoon sun, whereas the north and east sides will shade itself, therefore less watering will be required.
5. **Quality or Stiffness of Foundation:** All foundations are not constructed with the same strength or stiffness to resist the differential forces caused by volumetric change in the soil due to fluctuating moisture content. A stiffly constructed slab will need much less watering than a thin minimally constructed slab.
6. **Type of Soil your Foundation is Constructed On:** Most homes in the North Texas area are built on expansive clay soils. The higher the PI or Plasticity Index ratios which are present in your soil the greater the volumetric expansion and contraction of these soils will be and the demand for more moisture during the dry periods will be higher.

General guidelines for the amount of water that your lawn needs a minimum of 1" per week. This may not be sufficient and will be dependent upon the previously mentioned factors.

A sprinkler system may or may not be adequate to provide the moisture necessary to support your foundation. When designing a new sprinkler system, make sure there is a separate station designated for foundation coverage only. This will allow you to direct moisture where necessary and prevent wasting water in areas with less need.

When a sprinkler system is not present or is inadequate, then soaker hoses placed 12-18' away from your home are very effective in attaining the desired results. The use of properly programmed "Timers" will make this job easier and provide more consistency than manual operation.

Probably, the best answer I can give to the question "How much should I water my foundation" is to add water when the soil is evidently dry. Separation of soil from the foundation is a good indicator that soils are dry and more water should be applied where ponding occurs drainage corrections will be necessary.

Maintaining a consistent moisture level around the perimeter of your home when resting on expansive soils is critical to performance of most foundations. Your unique set of factors which effect the performance of your foundation and how much to water, will always be changing and will need to be adjusted accordingly.

