

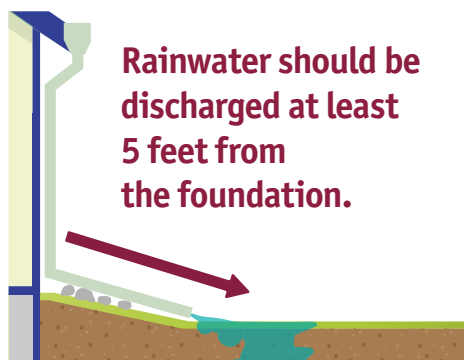


Why Aren't Home Builders Doing a Rain Dance?

by Walt Keaveny, Risk Manager, MS, PE, PG

Farmers and ranchers may pray for rain, but you won't catch a home builder doing a rain dance. Rain is generally the primary source of water that can create serious structural damage to a house. Rainwater that collects near the foundation soaks into the soil, causing expansive soils to swell unevenly and the house to heave. Water also causes expansive soils or improperly compacted fill material to shrink or consolidate, causing settlement. Water even seeps into basements and crawl spaces, causing moisture-related damage and mold.

Over 38 years of forensic investigations by 2-10 Home Buyers Warranty (2-10 HBW) have shown that a primary means to help avoid structural damage is to manage rainwater so that it cannot affect the soil near the foundation. Water is the fuel that drives soil movement. If the moisture content of the soil stays constant, even soils with the highest potential for movement will be much less likely to cause problems



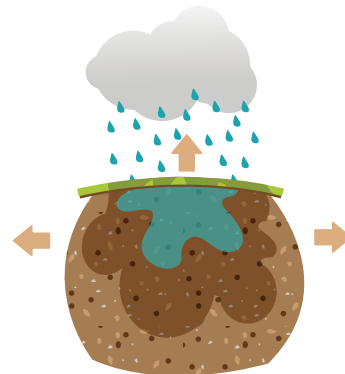
What are the best practices to manage rainwater? First, collect the rainwater that falls on the roof so that it does not drop directly next to the foundation. This is generally accomplished using rain gutters.

The rainwater discharged from the roof and rainwater that falls directly on the ground must not be allowed to soak into the soil near the foundation.

Many engineers recommend in areas with active soils that the grade shall fall 12 inches in the first 10 feet.

Once a proper rainwater collection, discharge and drainage system is established, it is important to maintain the system for the lifetime of the home. Make sure that sprinklers point away from the house, don't over-irrigate and allow water to escape from flower beds. To avoid irrigation, Xeriscaping is gaining popularity. Xeriscaping is drought-tolerant landscaping that reduces or eliminates the need for supplemental water from irrigation.

What are the signs of improper soil moisture content around the foundation? Soils that are too wet may be dark in color, moist and soft. Algae or mold may be present under some conditions. Standing water within 10 feet of the foundation after rain is a concern, especially if the water is still there 24 hours after the rain



stops. Soils that are too dry may be light in color, fissured and hard. The soils may be dryer on the side(s) of the home with more exposure to the sun. Dry soil may shrink away from the foundation leaving a crack between the soil and the concrete foundation. Stressed vegetation may be a sign that soils are either too dry or too wet.

Foundations, like most plants, don't want too much or too little water. Too much is always bad, and too little is a potential problem for slab-on-ground foundations in areas with expansive soils, where it is important to maintain a moisture equilibrium. A home builder that provides the correct water collection systems, establishes proper grading and educates homeowners on the importance of maintaining these features, will deliver a home that has the best chance of performing well. Just the right amount of water will improve your chances of avoiding costly foundation damage. If in doubt, consult a qualified engineer.



Mr. Keaveny is the Risk Manager and Principal Engineer for the leading new home warranty company, 2-10 Home Buyers Warranty. He earned a Bachelor's degree in Geological Engineering and a Masters in Geotechnical Engineering. He is licensed as both a Professional Engineer and a Professional Geoscientist, and has over 30 years of diverse engineering experience. He serves on the Construction Performance Standards Committee for the Texas Association of Builders, and is an invited speaker and author. Mr. Keaveny's work on the subject of structural claims has been published in major newspapers and has drawn international interest.



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