

Guest Column,

## New Home Foundation 101

By Ronnie Godfrey, CGB, president, R Godfrey Homes

### Proverbs 3:19

By wisdom the LORD laid the earth's foundations

The Foundation, after all, is the foundation. Before we start to build a new home we need to exercise wisdom and build it correctly. In this article we will talk about building the foundation and its maintenance.

First thing you need to know about concrete, the major substance used in foundations today, is that it will crack. Building the foundation correctly does not eliminate, it just minimizes the cracking. They all crack. You may not see it. It may be covered with some flooring material, but they all crack.

Here are the elements of good foundation construction:

- Soil testing- An engineering company will send out a crew with a small drilling rig to gather soil samples, usually to a depth of 20 feet. These samples are then taken to a laboratory where they are dried and run through a battery of tests to determine the soil's suitability for erecting a foundation on it. The results are given in writing to the engineer.
- Engineer's design- At this point the engineer will read the results of the soil test and specify the grade, size and way the different parts of the foundation are incorporated. The strength of the concrete is generally specified as a pounds-per-square-inch (psi) or in the number of sacks of cement to be placed in a yard of mix. Most builders use 3000psi or 4 sack concrete. He will specify the size and quality of the steel to be placed, moisture barrier, the drainage around the foundation and any recesses needed for steps, garage floor slopes, porch slopes, etc.. He may call for piers to be used under the

foundation. Piers should only be used if they are part of the design and specifically should not be used if not called for by the engineer. This design will be given to the builder in writing.

- Inspection- Before the concrete is placed, an inspector should visit the jobsite to verify that all of the engineer's requirements have been met. Note, I said concrete is placed. If the concrete is poured then it is too wet and the addition of too much water will compromise its strength. The builder should get an inspection report in writing before proceeding.
- Concrete placement- When the concrete trucks arrive, the builder should collect the documents from the truck drivers to verify that they have delivered what was ordered. The best way to place the concrete on a large foundation is with a pump. With a pump you can place the concrete with the correct moisture content, place it relatively fast and not have concrete trucks driving all over the property. It is best that the builder be on the job the whole time that this process is taking place to be sure it is done right.
- Curing- If it is possible to do so, the builder should make every attempt to slow the hydration or curing of the concrete. This will lessen the amount of surface checking (small cosmetic cracks) in the surface of the foundation and increase the concrete's psi. He can do this by spraying water over the foundation upon initial hardening to keep it moist and cool. Alternatively, he could cover with wet blankets. This is usually done with bridges and some commercial structures. A light rain after placing the concrete can be heaven sent for this purpose.
- Maintenance- The single most important thing that a home owner can do relative to maintenance is to maintain a constant level of ground moisture around their new home. If rain water dams up against one side of the home and drains readily away from the other then you're asking for foundation problems. Keep the drainage away from the house on all sides and keep the ground evenly moist year round.

Also, avoid planting trees too close to the foundation as the roots will make a path for moisture to get under the foundation or draw too much moisture out of the soil.

This is the abbreviated class on foundations. To learn more go to The Texas Residential Construction Commission to find out how your foundation should perform:

[http://www.trcc.state.tx.us/Consumers/state\\_min\\_warranties.asp](http://www.trcc.state.tx.us/Consumers/state_min_warranties.asp)

Proverbs 8: 1, 29-30

<sup>1</sup> Does not wisdom call out?  
Does not understanding raise her voice?

<sup>29</sup> when he gave the sea its boundary  
so the waters would not overstep his command,  
and when he marked out the foundations of the earth.

<sup>30</sup> Then I was the craftsman at his side.

Hebrews 11:10

For he was looking forward to the city with foundations, whose architect and builder is God.

For comments about this article contact Ronnie Godfrey at RGodfreyHomes.com or call 817 988 0149.