

Crawl space strategy changed over time

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Thousands of houses in Georgia and throughout the South are constructed over crawl spaces. Classically, in the Southeast, houses were constructed on piers, usually brick, with the entire crawl space open to the outside. In this case, the temperature and humidity of the crawl space was essentially the same as that of the outside air. Airflow through the crawl space effectively dissipated any moisture that evaporated from the ground. Generally, people were used to these conditions and lived with cold floors in the winter and hot houses in the summer.

History and codes

As time passed, however, people's habits and expectations changed. In the '40s and '50s, builders started to enclose crawl spaces with continuous foundations. This helped to moderate the temperature of crawl spaces — not so hot in summer, not so cold in winter. Understanding that there was moisture in the ground, builders installed vents in the foundation walls to allow some air passage and dissipate the crawl space moisture to the exterior of the house. This idea became so prevalent that building codes required ventilation of crawl spaces. Simply, the codes did and still do require 1 square foot of ventilation area for every 150 square feet of uncovered crawl space area.

Construction evolved

Over the past several decades, however, there have been several changes in the way people live. Since the energy crisis of the early 1970s, houses have become increasingly tighter and more energy efficient. Tighter construction results in fewer air changes within the living area of the house. This can result in an increase in the levels of unwanted substances from the crawl space, like radon or mold. There has also been a significant increase in the use of air conditioning in summer months, which makes the cooling effects of airflow through the crawl space unnecessary.

With the advent of tighter houses and concerns about levels of potentially dangerous substances in our houses, building scientists have begun to question the wisdom of ventilating crawl spaces, especially in hot, humid climates like ours. Starting with the 2000 edition of the International Residential Code, the building codes allow sealing and air conditioning of crawl spaces as an alternative to ventilation.

Evaporation of moisture

The greatest source of crawl space moisture is from evaporation from the soil under the house during summer. During the hot months, the exterior air is humid and does not readily accept the moisture from the relatively cool crawl space air. This is especially true if the air-conditioned house above is cooling the crawl space. The result is that humid exterior air passing through the crawl space vents tends to increase, not decrease the moisture levels in crawl spaces.

Venting tips

What does this mean for the thousands of us who live over ventilated crawl spaces? Here are some things you can do to help decrease the moisture levels in your crawl space.

- Make sure that the soil outside your house is sloped away from the foundation. This will reduce the chances of water entering the crawl space from the outside.
- Install a vapor barrier (usually 6 mil polyethylene) over the entire crawl space floor. Polyethylene is readily available at most home improvement stores, lumberyards, and hardware stores.

- If possible, seal the crawl space from humid, outside air. This means sealing off those crawl space vents. Remember, if your gas-fired furnace is in the crawl space, it needs air for combustion. In this case you will not be able to completely seal the crawl space.
- If after doing all of this your crawl space is still humid, consider installing a dehumidifier in the crawl space.

Send home repair questions to Ask the Inspector at H&G@ajc.com. Because of the volume of mail, not all questions can be answered. Our expert, Bill Garwood, spent 15 years as a building contractor before becoming a home inspector in 1990. He is part owner of a residential inspection firm and a company providing training in building inspection and codes.