

ASK THE INSPECTOR COLUMN FOR JULY 29, 2015

HEADLINE: RAISING CONCRETE SIDEWALKS

At a recent home inspection, we noted that the concrete pad around the pool had settled in towards the home. Over time, this was causing some water invasion issues in the block basement. This, understandably, was an issue for the buyer. At an inspection the following day, the same issue showed up, only this time it was with a concrete walkway that was a trip hazard.

Movement of any concrete, or wood for that matter, that is laid directly on the ground can, over time, be expected to have some settlement and/or decay. Mother Earth is always moving. Water invasion, the freeze/thaw cycle, poor drainage and lack of preparation, are the main reasons that most grade based materials fail. Our forefathers often built buildings right on the ground. Laying a timber on the ground, called a mudsill, was the start of a lot of wooden storage sheds and more than one summer kitchen.

As the soil below concrete compacts or disperses, hollow areas develop and pressure points are created. When this is coupled with the actual weight of the concrete and normal human or vehicle traffic, the concrete will shift, settle or crack. This then allows even more water to enter the soil below the concrete, which hastens the movement of the concrete. New homes are especially susceptible to movement in walkways, as the soil around the home can take years to finally settle. It is for this reason, that many new home builders use patio stones instead of concrete for an entrance walkway.

One of the methods for correcting this is called slabjacking; sometimes also called mud jacking, pressure grouting or concrete leveling. Basically, this is a process of drilling holes into the concrete and, by using a pressure pump, forcing a slurry-like material under the concrete until it is levelled. A reputable slabjacking company should be able to estimate the costs of repairs based upon the amount of settlement. What the contractor will do is measure up the area and estimate of the number of holes that they will have to drill into the concrete. This is probably the most important part of the job, as the trick to this business is using the right number of strategically placed holes in the area to be raised. The holes allow the material that is going to be pumped underneath the concrete to distribute evenly. Once the concrete is levelled, the holes are patched with concrete.

The consistency of the material being pumped under the concrete is also critical. If it is too thin, it will run out or shrink; if it is too thick, it will form pillars under the concrete and, in a short period of time, it will crack and settle again. I spoke to one contractor who said the consistency of porridge is how they try to get their mix.

There are a number of different kinds of mixture that these companies use. Sand and clay, leftover cement from a concrete job, a combination of sand and silt, polyurethane foam and, one company I spoke with uses a mix of sand, Portland cement and silty loam. A second contractor said that they prefer to use the sand and cement mix and possibly fly ash, because it is more environmentally responsible than the urethane foam. At the end of the day, it is a personal choice.

I spoke to a number of contractors that are in the Slabjacking business and learned that the cost of getting this done varied considerably. Some have a minimum charge; I got

figures from \$350.00 to \$500.00 for a small job. If it is a larger job, most used a method of square footage for estimating the cost of repairs. Here I got a difference in costs again, with quotes ranging from \$2.00 to \$6.00 a square foot for raising a sidewalk or driveway. This was a surprisingly wide range of pricing.

All of the slabjack contractors expressed confidence that they could raise nearly any pad. One said he was very careful quoting a job where the pad was a large area that had settled against the home, as he knew of a case where a company had damaged a foundation. This is why you should do your homework. Get two or three quotes on the area you are hoping to get raised. Get some references and go see the work done. The area to be repaired should be clearly marked out so both you and the contractor agree on the amount of work and the price. Get a written estimate, verbal prices don't cut it.

Slabjacking is not fool proof, since new cracks can happen and old ones can enlarge over time. This is usually because they did not balance the volume of grout going into the surrounding holes or they filled the holes in the wrong sequence. Installers who are experienced will quickly spot problems. If the slab is lifting in the wrong place the mix is likely too thin. If the concrete binds against the adjoining concrete or foundation, care should be taken.

I have seen a number of these jobs done over the years and have been impressed with the final product when it's been done properly. When you consider the cost of removal and replacement of a concrete walkway, coupled with the inconvenience of the noise, time, dust and disturbance of surrounding landscape this is often a viable alternative.

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