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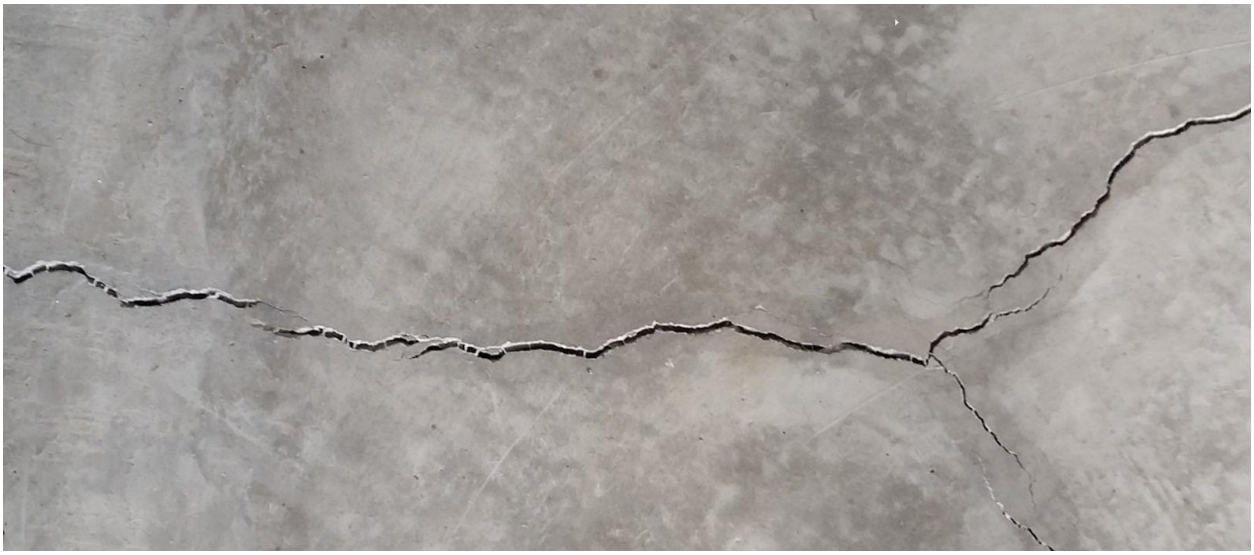
6 Common Garage Floor Cracks – Should I Be Concerned?



What is causing the cracks in my garage floor?

Cracks in a Garage floor can be a warning sign for foundation problems and other issues. Don't worry too much though, not all cracks are cause for concern. The size, shape and location of cracks can determine the urgency with which you should act. Cracks in the garage floor are often quite common and should create any cause for concern.

For you new construction buyers out there….

Your home is new, why is the garage floor cracking already?

Even new homes can develop cracks in any concrete surface throughout the home, including the garage, as early as a few months, to the first few years after construction. This doesn't necessarily mean there is a significant underlying problem. Contact a concrete expert for evaluation if you see cracks that are wider that 1/8th of an inch, or if one end of the crack is wider than the other end, or if the crack is expanding and displaced in height.

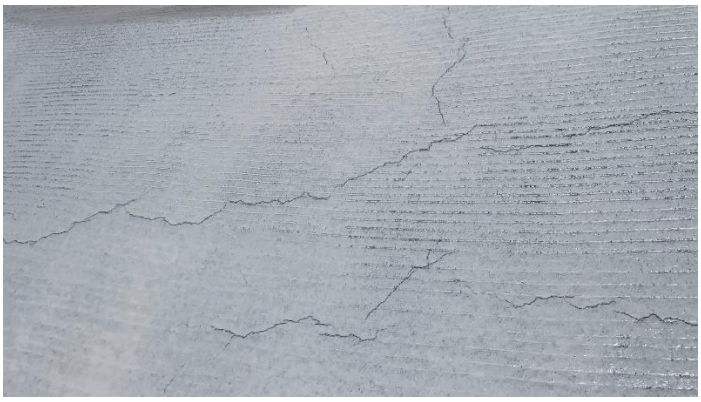
Common types of garage floor cracks for new and existing homes

#1. Cold joints. Cracks that aren't really cracks.

Due to construction delays, work stoppage, or slow rate of pour placement, cold joints are created. This occurs when one batch of concrete begins to set before adding another pour on top of or beside the earlier pour. A cold joint crack is simply the crack that naturally occurs between those two separate pours. It rarely indicates a structural problem, especially if the concrete is under compression. Cold joint cracks are more commonly visible in poured walls than floors.

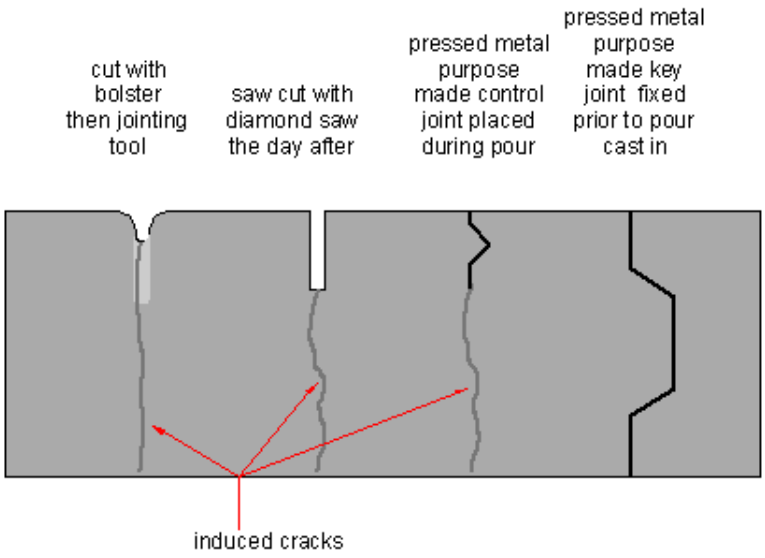
#2. Plastic shrinkage cracks

When concrete is still in its plastic state (before hardening), it is full of water. Shrinkage naturally occurs when excess water evaporates in concrete while it sets-up/cures. These types of cracks are typically not a major concern. Shrinkage of 1/8 of an inch in each direction is not uncommon. You can also see tiny cracks show up from concrete shrinkage.



#3. Control cracks and joints

Most of the time, garage floors will have more control cracks than cold joint cracking. Control cracks are intentionally placed throughout concrete slabs to allow contractors more control over where the concrete will eventually crack. This also allows for more flexibility when the concrete naturally expands and contracts. "Expansion joints" are commonly known by many homeowners, and is one example of an intentionally engineered element to control cracking in concrete. There is generally no problem with control joints and cold joints.



#4. New construction settlement

There are several causes of new construction settlement, including the drying and shrinking of the soil upon which the home is built, the wetting and softening of the soil, and the compression of poorly compacted fill soil. All of these can cause the concrete that lays upon it to crack as the structure settles. The first year or two after construction is a typical period of settlement and is not necessarily cause for concern. Settlement can cause small cracks to appear in surfaces. In most cases, these cracks should not be a concern until those cracks appear to widen, displace, and/or start to manifest within interior wall and ceiling structures.

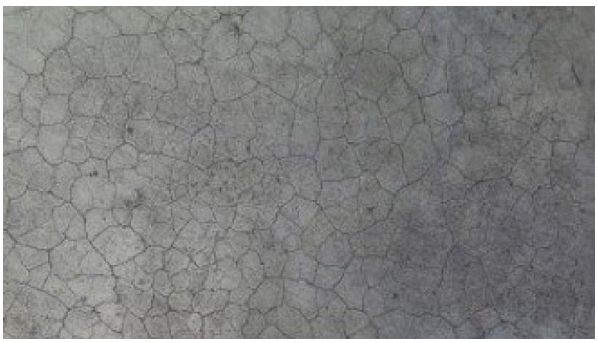
#5. Rushed construction

To meet deadlines, or beat weather events/seasons, construction work is often rushed. Rushing construction processes that require time or dry conditions for materials to dry, adhere, cure, or set up, can compromise the integrity of the material and lead to failure, or cracking. With concrete, speeding-up the process by using the wrong concrete mixture, curing facilitators (blankets, agents, applied heat, etc) or not allowing enough time to fully cure, can show up later

as cracks. Moving quicker than engineered timelines is never a good idea because it will increase the risk of issues in the future, including the presence of cracks and possibly structural failure.

#4. Crazing

Crazing cracks are hairline-type cracks that appear on the surface as random hexagonal patterns. Crazing generally doesn't extend more than 1/8th of an inch deep. Crazing in concrete can be caused by several things such as overfloating wet concrete, sprinkling dry concrete on wet surfaces, shrinkage of the surface layer due to the water in the concrete evaporating too quickly, or poor/inadequate curing. Crazing does not affect structural integrity, and rarely impacts durability.



#5. Poorly compacted sub-grade base

Concrete is heavy. The sub-grade and base must be properly compacted or else the slab will sink under its own weight. As the sub-base sinks, the concrete will crack at the weaker areas.

#6. Improper slab reinforcement (such as rebar, post tension cables, or wire mesh)

Slab reinforcement is essential to make concrete stronger and reduce cracking. However, the reinforcement materials used must be correctly and sufficiently incorporated with the pour to ensure their proper engineered effect. Frequently, a concrete slab that lacks proper reinforcement will crack no matter what.

Other types of cracks…

- Heaving cracks – When the ground freezes and pushes the concrete up.
- Cracks caused by overloading – When excessive overloads are placed on the concrete.

What are signs of structural damage?

Cracks can signal structural compromise. Knowing what to look for within the full context of the home's condition and the presenting evidence can help diagnose cracks that are normal, and cracks that indicate structural concern. Structural cracks should be addressed promptly. Here are a short list of questions to ask yourself to help identify when it's time to engage an expert.

Start by answering these questions:

- Is there a lot of cracking happening on my garage floor?
- Are the cracks wide?
- Is one or more of the cracks displaced? (is one side of the crack higher than the other side?)
- Does the crack on the floor continue up the wall?
- Are cracks appearing at the corners of windows and doors and running diagonally?
- Do cracks get wider as they get longer?

If you answered yes to any of the above questions, consider contacting a structural engineer, or a concrete contractor who offers structural consulting services.

If you have any questions, please contact me:

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