

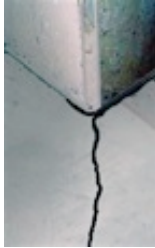
# Smart Words for Smart Homeowners

THE EXPERIENCE OF EXPERTS AND THEIR ADVICE ON RELEVANT HOMEOWNER TOPICS

## Concrete Floor Cracks: Reasons & Remedies

### Overview

“Normal” Cracks? What is not normal are dangerous, unsightly, excessive and uneven cracks. Not every crack is a problem or potential threat. Some cracks are structural and some are just cosmetic. There are a few reasons for concrete cracks.

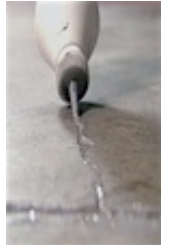


- 1) The sub surface or supporting structure has moved and the top concrete layer is too thin to support itself.
- 2) The top concrete surface was mixed or applied incorrectly. Or it may have been the wrong mix, or poured in freezing weather without the proper additives.
- 3) Moisture has penetrated the layer between the sub and top surfaces, then a freeze-thaw cycle de-layers or heaved the concrete.
- 4) Expansion and contraction due to changes in temperature put stresses on concrete, resulting in cracks.
- 5) Shrinkage of the concrete. Shrinkage is simply a reduction in the volume of concrete as it hardens. Some is normal. In the first 24 hours to 90 days the volume of concrete changes; it shrinks, cures and settles. Concrete will shrink and expand as moisture levels change, and while there are a number of ways to minimize shrinkage, some is inevitable.
- 6) Poor workmanship and inappropriate joint detailing. This is a construction deficiency that should never happen and is rare where qualified inspections are frequent.
- 7) Lack of adhesion; dirt between sub & top surfaces (it was not clean when applied).
- 8) Pressure moving the sub or top surface. One example of this are growing tree roots or the removal of a tree and its root ball leaving a void in the place of a support.
- 9) Settlement or heaving of soil
- 10) Reinforcement (re-bar) corrosion



used in construction. These are available in manageable lengths at your local home center or some lumber yards.

In other cases you'll need to build forms to hold and shape the concrete while it cures and sets up. What ever the steps, you must not skip any or the final job will look amateurish and/or not last.



### Next Step

In each case you must discover the cause, the reason for the crack, or deduce the reason, before repairing the cracked top surface. Unless you remedy the cause the cracks will continue to appear and probably get worse. Fix the source of the problem then repair the concrete.

### Repairs

Some fixes are hard and some are easy. Some operations require special tools and some do not. All repairs require effort, time and materials so adjust your mindset and get to it.

### Cracked Floors

Not every crack threatens the structural safety of a building. In fact, in many instances, cracks are merely cosmetic in nature. These cracks are typically seen in flat work such as walkways and curbs.

Sometimes such nonstructural cracks in driveways and sidewalks become more than just an eyesore. Tree roots and impact from vehicles can cause raveling as well as vertical and horizontal offsets at the cracks. When these offsets become trip hazards, repairs are necessary.



### Some Tools You'll Need

An old paint brush to dust and moisten.

A hammer drill if you have deep excavating to do.

Water.

Half inch steel rebar.

Cold chisel for excavating cracks and loose sections

An appropriate pre-mix like QUIKRETE® for the job. There are many kinds, to fit each type of repair, so ask and read the labels.

### To Be Successful

The trick to a successful floor patch job depends on pinning the new concrete patch to the old concrete. In some cases you'll need to tie a large section of new concrete together with reBar; reinforcement steel bars

