

Cracks in Concrete Walls

Cracks in poured concrete walls and slabs are a common occurrence. They appear in floors, driveways, walks, structural beams, and walls. Cracking cannot be prevented, but it can be significantly reduced or controlled when the causes are taken into account and preventive steps are taken. Most cracks should not be a cause for alarm.



Typical shrinkage crack



Cracking due to settlement. This crack has been repaired, but should be monitored periodically for any future movement.

- Applied Stresses — Forces such as building load, earth load, hydrostatic pressure, or heavy equipment operated too close to the wall.

Types of Cracks

Tremendous forces can build up inside a wall due to any of the above causes. When the forces exceed the strength of the material, cracks will develop. Each of these causes normally leaves a specific type of crack.

Shrinkage and Thermal Cracks

- Most often vertical to diagonal
- Typically emanate from a corner of a window, beam pocket or other opening
- Very common
- Not a structural concern unless leaking or showing significant lateral displacement.

What Causes Concrete to Crack?

Cracking can be the result of one or more factors, including:

- Drying Shrinkage — This occurs as water used in the mix evaporates.
- Thermal Contraction/Expansion — Due to temperature changes.
- Subgrade Settlement/Expansion — Resulting from poor soil conditions or changes in soil moisture content.
- Differential Bearing Capacity — Harder soils under part of the foundation can cause stresses as the building “settles in.”



This crack is wider at the top and extends all the way through the wall, allowing water intrusion. Professional repair is recommended.



Cold pour crack in new construction. These have been patched, but should be monitored for water intrusion.

cracks, and ones with displacement, an evaluation by a structural engineer is highly recommended.

Foundation repairs can be very simple or very expensive, depending upon the location, type and severity. Most of the time, addressing the underlying cause of the crack will prevent future worsening.

If we feel a crack may be compromising the structural integrity of your basement, we will recommend contacting a structural engineer for a professional opinion.

Applied Stress Cracks

- Most often horizontal
- Most serious when there is bulging and/or displacement

Settlement and Bearing Cracks

- Most often vertical
- Significantly wider at the top or the bottom

When Should You Be Concerned?

Temperature and shrinkage cracks in walls or slabs are likely to occur in nearly all structures. However, any crack that shows the following signs should be evaluated by a professional.

- Width exceeds 1/4 inch
- Shows greater than 1/4 inch in lateral displacement
- Water leaks through the crack
- The crack is long and horizontal
- The crack is lengthening or widening

Crack Repair

There are many different methods for repairing concrete cracks. Most involve injecting a stabilizing material into the crack, effectively gluing the slabs together. For larger



A basement crack repaired with the injection of an epoxy material. Repairs such as this usually come with warranties against future movement along the repaired area, but not against cracking in other locations.