



---

# CRACKS IN CONCRETE WALLS

**What Causes Them?**

**Should You Be  
Concerned?**



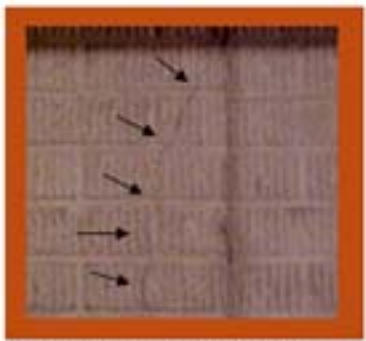
# Cracking In Concrete Walls

Cracks in concrete walls and slabs are a common occurrence. They appear in floors, driveways, walks, structural beams, and foundations. Cracking cannot be prevented, but if you will take a few minutes to review the following information, you may begin to see that most cracks should not be a cause for alarm.

## Causes Of Cracks

First of all, remember that the basement under your house is a cast-in-place, solid concrete wall. It is heavier, and much stronger, than other foundation building materials. Solid concrete, whether cast in a skyscraper, bridge, road, or basement has particular properties. Concrete turns from a flowing material to a solid by way of a chemical reaction, called “hydration.” This reaction occurs as the cement comes into contact with water. The reaction creates a crystalline substance that binds the ingredients in the ready-mixed concrete – like hard glue – and eventually the material is solid, and very strong and durable. Another normal property of concrete is the development of cracks. Concrete usually cracks, and foundation walls are no different. There are many possible reasons for cracking of concrete.

## Types Of Cracks



**Typical Shrinkage Crack**

Cracks in walls appear in several forms. Nearly all vertical cracks are usually caused by shrinkage or temperature change. A newly poured concrete wall has the greatest volume it will ever have. Tremendous force can build up inside a wall as moisture evaporates or



**Typical Reentrant Crack**

when the wall is exposed to temperature change.

Diagonal cracks which emanate from the corners or windows, openings, or other changes in the shape of a wall (or slab) are called reentrant cracks and are a form of shrinkage crack. Temperature and shrinkage cracks in foundations may appear within days to several years after the home is occupied.

In addition to the inherent causes of cracking in concrete, a foundation experiences other stresses that can cause cracks. The weight of a foundation and house will cause some

compression of the soil under the footing. This action is called settling. If settlement occurs equally under all parts of the house, there would be no cracking caused, but any “differential settlement” can cause cracks. A vertical crack that is significantly wider at the top or bottom could signify heaving or settlement. Backfilling techniques and materials can also cause cracking.

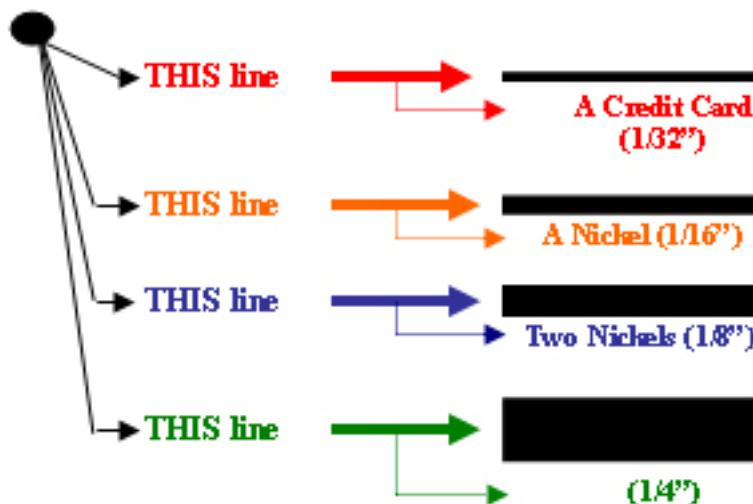
Fortunately, our experience has been, after over 30 years in the business and 15,000 foundations poured, that the vast majority of cracks in poured concrete walls are not structural in nature.

## When Should You Be Concerned?

Temperature and shrinkage cracks in walls and slabs are likely to occur in almost all structures. When the width of a crack exceeds  $\frac{1}{4}$ ”; if water is leaking through the crack; or, if there is a noticeable bow in the wall in either direction, the builder or foundation contractor should be contacted. (See next section for measuring tools.) If you experience water penetration through a crack and you have a waterproofing warranty, see the warranty for instructions or call the builder or foundation contractor.

## HOW WIDE IS THE CRACK IN MY WALL?

Using the paper edge as a guide, measure the crack. Is the crack the thickness of:



This addresses, in a general way, typical concrete foundation conditions. It is not a blanket explanation or indication of acceptance of all foundation cracking or other problems. If you experience cracking or other problems with your foundation that do not fit the description of this brochure, we advise you to call for further information.

**41807 State Rt. 18  
Wellington, OH 44090  
1-800-782-9451 • FAX (440) 647-7601**

