

Cracking most often occurs in buildings either because of movement in the materials it is constructed from, or as a result of changes in the ground underneath or around the building.

Cracking is not always detrimental to the fabric of a building, and as an example, it is common to see shrinkage cracks in new buildings which have a tendency to develop around doors and window openings, or at the junction of walls and ceilings. These types of cracks can be easily filled and decorated; they are also unlikely to require any type of complicated or expensive remedial work to be undertaken.

Conversely, if a building is a number of years old and develops new cracks, this should then be investigated by a Chartered Building Surveyor to diagnose what has caused it and to advise on what further action should be taken. If current structural movement is taking place, costly remedial works may well be required to stabilise the building.

Cracking can be very complex indeed and will require detailed examination by qualified Chartered Building Surveyors; this sometimes requires monitoring over a long period of time to determine the cause and most suitable solution.

Examples of movement include settlement, subsidence, and heave.

When a building moves in a downward direction, this is often described as 'Settlement'. This gradual movement, which usually occurs in the early stages of a building's life, is generally caused by the weight of the building itself. The ground conditions under the building will also affect the amount by which the building will settle. The design and construction of the foundation will help to ensure that the settlement of the building occurs evenly across the whole building. Unfortunately, sometimes this isn't the case and the building will settle at different rates, and this can lead to cracking in the external walls. This differential settlement is often seen at the junction of a house and any newer extensions that have been built on. A vertical crack will often develop where the two meet, as the new extension starts to settle.



e.g. an example of foundation movement

When the ground that is underneath or adjacent to a building moves in a downward type direction, this is usually described as 'Subsidence'. There are many differing causes of subsidence, for example mining subsidence occurs in numerous parts of the country near to or over former mining shafts. Subsidence caused by clay soils is also a common problem as clay is prone to shrinking when very dry leading to movement of the foundation. This is often made worse if the house has nearby trees, leaking drains or water pipes as this can wash away the soil beneath. Also in some instances, houses built on land which has been previously used can suffer from subsidence as the ground which may have been built on starts to compress.

When the ground beneath or adjacent to property swells, this is usually due to a condition called 'Heave'. This occurs when the equilibrium in the soil changes. As an example, a soil that was previously dry latterly becomes wetter, following the removal of trees. The soil beneath a foundation can then swell upward, pushing the house with it, again resulting in cracks to the house.

Cracking can also be caused by a number of other things, all of which a Chartered Building Surveyor will take into account when looking at the cracks.

Clay bricks expand for example shortly after they are laid, and concrete blocks shrink. This difference in movement often results in internal cracking to the plaster around windows and doors.



e.g. an example of failing cavity wall ties

In many older houses, the iron wall ties that were used to hold the inner and outer masonry leaves together corrode. As the iron corrodes, it also expands resulting in horizontal cracks in the external walls.

Lintels and brick arches over windows and doors are also prone to movement. In many older houses, the use of timber internal lintels was common, together with a brick arch externally. Slight movement of the brick arch can result in a crack forming above the window or door.

People often unwittingly remove internal walls or chimney breasts from their houses. This can result in cracking to the upper floors, or even complete collapse of the chimney stack.

A Chartered Building Surveyor will inspect the inside and outside of the house, ask many questions about the history of the house, and will often take a look at similar houses in the same road. Cracking associated with ground movement will often be accompanied by cracks that pass into the ground, and sometimes internal doors will stick on their frames. Whereas cracking associated with shrinkage of the house shortly after construction will largely appear at the junctions of walls and ceilings, and around window and door frames.

Houses are constantly moving. During the day it will warm up, and overnight it will cool down. The ground on which it sits also moves as the seasons change. In many cases, cracks are not serious and can be

filled and decorated. They sometimes re-appear as the seasons change. However sometimes they need to be monitored over a period of a year, before any repair works can be recommended.

It is unlikely that just by looking at a crack in isolation will determine what has caused it. The approach is more diligent and a Chartered Building Surveyor will take many factors in to consideration, including how and when it was built, before offering an explanation of the defect. At this point, the Chartered Building Surveyor will advise on any course of remedial action that is required. There is a strong likelihood that if the house requires expensive structural repairs, your insurance company that provides the buildings insurance cover for your house will need to be informed. This process may also involve appointing a structural engineer.

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