The building code defines portland cement plaster as a “brittle” material that can crack if the membrane is subjected to enough stress. At times it may be challenging to identify the source of the stress when investigating a crack on a plaster (stucco) project.

**Casing Beads:**
Casing beads are used to terminate plaster panels, while control joints are installed to keep plaster panels to the code-compliant maximum dimensions. Control joints are also installed within the plaster assembly to help relieve stress, provide screed points, and add dimension/design to the structure. Often cracks appear in the plaster membrane running parallel with the accessory. Some feel this is caused by an installation defect while others claim the accessories are doing what they are supposed to and “controlling” where stress (cracks) will likely occur.

Properly mixed and applied cement plaster will shrink slightly during the initial cure period. In many cases the brown coat is rodded/tooled flush to the accessory and the finish coat is applied over the exposed flanges of the accessory (minimizing the appearance of the accessory). Because cement plaster will stick but not bond to these accessories during the curing period, a crack may develop along the accessory. This crack could start on one side of the accessory and finish on the other side (follows least resistance) and the finish coat may spall from the accessory in spots, resulting in a wavy line.

**Aluminum Reveals:**
When aluminum reveals are specified within a portland cement assembly, separation of the reveal to the plaster commonly occurs due to thermal expansion.

In extreme temperatures aluminum expands and contracts at a rate of about two and one half times greater than portland cement plaster.

Even when restrained by proper installation, thermal expansion of aluminum can cause cracking, buckling and separation of the aluminum from the plaster. When incorrectly installed, aluminum can separate and lose its shape and pull apart at intersections. In direct sunlight, the plaster surfaces can be 20 to 50 degrees Fahrenheit (depending on color and elevation of site) hotter than the ambient air temperature.