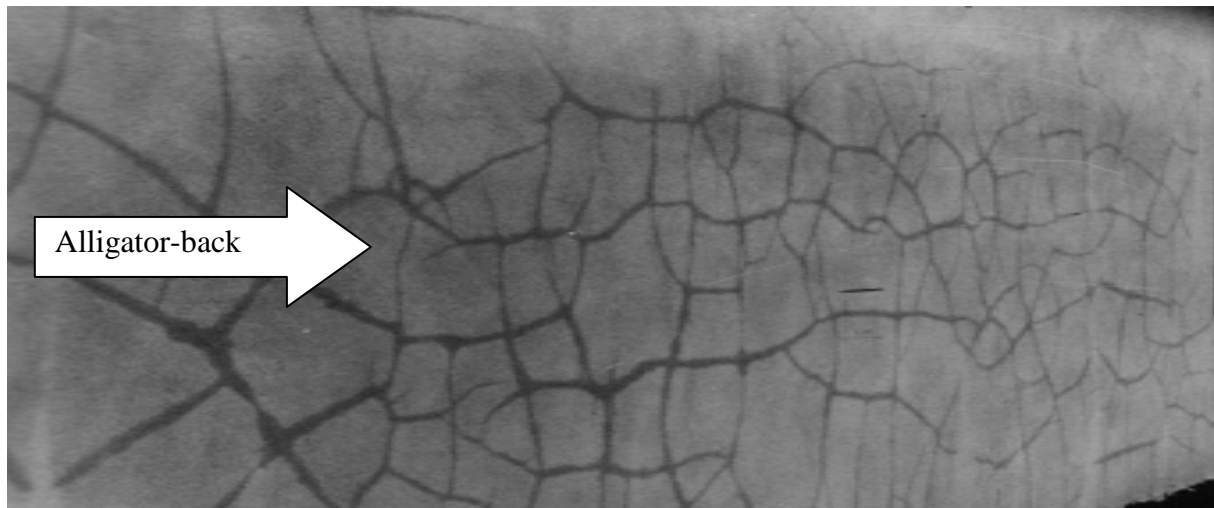




## **“Alligator-back” – Causes and Correction**

There are two primary types of cracks that occur in stucco: shrinkage and movement. Both are easily identifiable by the pattern in which they crack. The “alligator-back” pattern is indicative of shrinkage cracks. Long, fairly straight cracks are almost always the result of some sort of movement. There are a myriad of sources to cause movement in a wall or structure and we will not discuss those here.

The crack pattern in the photo below is due to the reduction of volume due to rapid loss of water in the fresh plaster. This is a common and natural consequence. Most of this type of cracking is preventable by keeping the wall damp for several days after plastering.



Several factors may contribute to this loss. When fresh plaster is direct-applied to a solid substrate (concrete, block, stone, brick) the substrate should be dampened to prevent the type of cracks shown above.

Concrete block come out of the plant in a still wet state. This volume of water makes the block as big as it will ever be. As soon as it is set in the yard it begins to shrink as it dries out. Then, when it is semi-dry it gets to the jobsite and is placed in the wall where it dries further. So, when wet plaster is placed on dry block, the block will absorb the moisture out of the plaster in an effort to satisfy its' and the mortar joints' thirst for water. This reduces the volume of the plaster too rapidly for the plaster to retain its' original volume, thereby, causing a small shrinkage crack to appear.

These cracks are cosmetic in nature and, in most cases; do not penetrate the entire plaster thickness, just the finish coat. They therefore rarely pose any threat to the durability or water tightness of the plaster assembly.

Prevention can be as simple as dampening the wall prior to application of the plaster and fogging the wall several times per day for three to four days after application. Weather conditions can vary this requirement.

The photo below shows a similar issue on the underside of the overhead structure but with an added factor. It appears much the same as the cracking above but with much smaller “alligator-back” patterns. This condition is usually caused by overworking the plaster but can also be the result of too fine a sand. This happens when an area begins to reach initial set before the plasterer has had time to get it floated. Overworking causes the finest particles of sand to come to the surface producing a layer of plaster with all the same size aggregate. Plaster aggregate is necessarily of varying sizes to promote mechanical bonding within the plaster itself. This is very similar to overworking concrete.



It may be unwise to try to seal all of these cracks and it is generally considered inadvisable where cosmetics are the only reason for doing so. These minor cracks are usually more pronounced after a rain or on a foggy morning as the wall begins to dry out. Often, the repair of this type of crack is more visible than the crack itself. The owner should decide which direction to go.

If you have other questions, please contact your local Titan America representative at (800) 226-2057 or at [www.titanamerica.com](http://www.titanamerica.com).

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