



“Ghosting” in Stucco

The term “ghosting” in stucco refers to the visibility of the mortar joints in the concrete masonry wall substrate. Where stucco has been properly placed and cured, this should not be evident. Ghosting is caused by several factors but is preventable with care and precautions.



Factors affecting the ghosting phenomena include curing of the masonry wall, curing of the stucco and thickness of the plaster.

Concrete masonry units (block) are moist cured for a period of 24 hours at the end of the manufacturing cycle. They are then cubed and stored outside for a period of at least 28 days prior to being shipped to the site. During this time, the block are absorbing moisture from the atmosphere and gaining strength (curing).

On site, the block are set with fresh masonry mortar. By necessity and design, the block absorb the moisture from the wet mortar which carries with it the cement paste that will hydrate (cure) and create the bond that both holds the block together and apart. This process actually creates the initial cause of future ghosting. The mortar dries out faster and is less dense than the block itself. This causes it to both shrink somewhat and to be of a slightly different color. Remember that the block got to stay moist for 24 hours while the mortar does not.



The crack above is due to mortar shrinkage. Sometimes these cracks will continue in a “stair step pattern following the mortar joint. Shrinkage cracks are very narrow (usually less than 1/32 inch) but will reflect through the stucco.

Now the block and mortar wall continue to dry out prior to plastering. Again we place wet mortar, in this case stucco, onto the dry block wall. And again, the block and now the mortar joint absorb the water from the plaster causing the plaster to dry out quickly. The mortar joint will absorb the water at a faster rate due to its' being less dense and more starved for water than the block. Typically, this results in the mortar joint looking darker than the surrounding block.

The Florida Building Code and the referenced ASTM Standards require certain “nominal” thicknesses of plaster coats. Over concrete masonry the requirement is ½ inch in at least two coats (not counting the texture). Where the stucco has been applied at less than the required

A Titan Group Business

thickness, ghosting is exponential more likely to occur. My thoughts are that anywhere the plaster is $\frac{3}{8}$ inch or less in thickness, you will definitely have ghosting.

Prevention is fairly simple and involves 4 or 5 steps:

1. If possible, get the mason to wet his walls down at the end of each day. This will reduce the thirst of the mortar joint and prevent some shrinkage cracking.
2. As required by the ASTM Standards, wet the block wall evenly just to the point of runoff and let the water soak in just prior to applying the scratch coat stucco.
3. Wet the scratch coat prior to application of the brown coat or the finish coat if using the "double-back" method of application over concrete masonry.
4. Wet the wall several times per day for a period of several days after the completion of the stucco. The rate and length of this moist curing period may vary with the weather. Rainy, high humidity weather will require less wetting than will dry, windy conditions.
5. Apply the scratch and brown coats to $\frac{3}{8}$ inch and the finish coat another $\frac{1}{8}$ inch for a total of $\frac{1}{2}$ inch or more.

For more information regarding ghosting or other stucco issues, please contact your local Titan America representative at (800) 226-2057 or www.titanmaerica.com.

G. Michael Starks CGC, CDT, CCPR, LEED BD & C
Specifications Representative