



April 27, 2016

## FRC, IRC and the 5<sup>th</sup> Edition “Curing” Requirements

There is a lot of noise in the system lately regarding the “new” curing paragraph with the FRC (703.6.5). Actually, this paragraph is not new at all. It has been a part of the IRC since most of the old codes were combined into one years ago. It was specifically redacted by Florida from the base version of the IRC at the time it was adopted as the basis of the new FRC. Why?

- 1) ASTM C926 allows for successive coats to be applied while the underlying coat is still damp but after it has reached “sufficient rigidity” to carry the weight of the next coat. This is usually defined as “thumb-print” hard. In other words, when your thumb leaves a print and not a dimple. Experience and deconstructive investigation has taught us that applying successive coats in this manner promotes improved monolithic bonding between coats.
- 2) In contrast to a commonly held belief that this “curing” period allows for one coat to crack before the next is applied so that the cracks don’t line up, the opposite is actually true. Stucco, in this case, acts very much like concrete. The stresses induced by shrinkage or movement can tear the plaster membrane. It does this along the weakest path. This is why we saw cut fresh concrete. Doing so creates a weaker path for the crack to follow simply because there is less concrete to break. The difference is that concrete often gets a non-absorptive layer underneath and temporarily on top to help hold the water in and prevent shrinkage. Stucco doesn’t get that luxury. It is a thin veneer or cladding that is left exposed to whatever weather conditions exist. Therefore, applying the next coat as soon as possible helps to keep the water in the mix longer, slows down the absorption by the underlying coat and allows it to more fully develop its cure between moist curing applications, spraying or fogging. Additionally, a crack in the substrate will telegraph through the new layers being applied for the same reason. There is now a thinner, weaker path directly over the existing crack in the underlying substrate. This is evidenced by the stair-stepping cracks sometimes found reflected through the stucco from the masonry. Stucco cannot hold the substrate together.
- 3) It is an antiquated requirement primarily for use with the old Portland Cement/Lime (PC/L) mixes that were prevalent prior to the invention and adoption of masonry and stucco cements. Lime holds water well and provides workability to Portland Cement plaster. However, these mixes had much higher shrinkage rates than do today’s stucco cements. Portland Cement/Lime mixes are not recommended for use in Florida for a variety of reasons (see TB ST-05-12 at [www.flapb.com](http://www.flapb.com)) many of which are environmentally (weather) related.
- 4) Today’s stucco cements are far superior to PC/L mixes in terms of workability, shrinkage, versatility and cost without sacrificing durability.

The reappearance of this paragraph is due, in part, to the Florida's Sunset Laws which automatically terminate such redactions, additions or special clauses on a scheduled basis without the appropriate renewal request. Therefore, it is also partly due to our industry simply missing this redaction and failing to request its continuation.

Why is this important?

- 1) Curing is accomplished by the presence of water. Water is the catalyst in the chemical equation that causes cement to get hard, thereby reducing its pH. Chapter 703.6.5 does not address curing at all but simply adds a waiting period to the plastering system, increasing it by at least 5 - 7 days.
- 2) As written, it will lead to a great deal of delamination and/or debonding issues. In fact, this has been tried in several locales in Florida and around the country before with the aforementioned issues resulting. As few as 25 years ago it was tried in a major Florida west coast market and was repealed within a few months due to a high incidence of debonding problems.
- 3) This section is in direct conflict with all the prior sections within this Chapter (703.6 and 703.6.4) as the Chapter calls for application according to ASTM C926. C 926, as stated earlier, recommends next coat application as soon as possible. There is a specific exemption in Section 703.64 that exempts C926 compliant applications.
- 4) Adoption of this section will require the plasterer to mobilize 3 times to accomplish his scope. This adds significant cost due to scaffolding and labor coordination and will have the unintended consequence of mass layoffs and business closings as builders change their exterior coatings to systems that do not require adding 5-9 days to the construction schedule.
- 5) This section offers nothing in the way of "protecting the general public." In actuality, it will be detrimental in that regard.
- 6) This measure would require an extra, practically unenforceable, inspection on already razor-thin budgets and limited staff.

Both ASTM and FLAPB are consensus organizations made up of engineers, architects, manufacturers, contractors and subs all considered to be experts in the trade. Therefore, the standards they support are in tune with the best practices as observed both in the field and supported in the lab.

ASTM and FLAPB support 703.6 and 703.6.4 as the preferred methodologies for Portland Cement-Based plaster.

FLAPB, FHBA, FC & PA and several other groups drafted and submitted two requests for a declaratory statement from the Code Commission in support of ASTM C926 as the preferred method of applications for stucco in Florida. FHBA, having standing with the Code Commission, was granted an appearance before the Commission at their meeting on August 18, 2015. John Farinelli of JC Code & Construction Consultants and I were present and John presented our arguments to the Commission. With that and the support of the Commission's Technical Review staff, the Commission voted unanimously to issue a declaratory statement in support of ASTM C926 and Section 7.3.6.4 of the Code. A copy of that statement is attached.

A companion proposal to change the existing language in the base code, IRC, has been submitted.

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