By Lee G. Jones

I am pleased to report that there actually are critical readers of Wachuwannano out there who are occasionally willing to share their knowledge, and flesh out topics that I have touched upon, but for a variety of reasons didn’t quite hit the mark. I recently ran an item addressing the proper cure times for the different coats in three-coat portland cement plaster or stucco. In the item I cited a conversation with Darin Coats of the Technical Services & Information Bureau. Coats detected an oversimplification in my reporting. Here is an excerpt from his e-mailed response:

“I would like to point out that there needs to be a correction in that article. It says each of the three stucco types require a minimum of 48 hours for both moist curing and between the scratch and brown coats, and seven days before applying the finish to the brown coat. The correction is, five days before applying the finish to the brown coat. There is a minimum of seven days of waiting between brown coat and finish coat (two days of moist curing, plus five days of drying time equals seven days total).”

I also received the following email from Gregg Lowes, the executive director of the British Columbia Wall and Ceiling Association. He writes: “I just read your Wachuwannano article in the July ‘02 edition of AWCI’s Construction Dimensions regarding stucco cure time between scratch and brown coats. Your answer was partially correct based on the code references, but needs further expansion. In fact, this is a question I get very regularly in my area (British Columbia, Canada) because portland cement plaster (hard coat stucco) is a very popular cladding, but does face the scrutiny of many building envelope consultants and engineers.

“The cure time between scratch and brown coats depends on a variety of factors, including temperature, building and wall orientation, current weather and humidity, as well as the temperature of the engineer of record. Cure time answers are further complicated by the well-established practice of the ‘double-back method, where the brown coat is applied ‘as soon as the scratch coat plaster is sufficiently rigid to resist, without cracking, the pressures of the brown coat application.’ A good, brief discussion on this is found in the Portland Cement Association’s publication, ‘Portland Cement (Stucco) Manual,’ 1996 edition, pages 20 and 21.

“The key to successful curing of cement stucco is to ensure that moisture stays in the mix for as long as possible, as cement cures through hydration. In a cool climate, it may take a number of days for a scratch coat to cure, whereas a hot, dry interior climate (Phoenix, Spokane, Kelowna, B.C.) may dry a scratch coat in a matter of hours-too fast for the hydration process to be completed. Therefore, the use of a double-back method helps considerably in retaining the needed moisture in the system to affect an adequate cure. In addition, the coat(s) may need to be moisture cured, even if the double-back method is employed, because an uncurd but dry scratch coat will be weaker and could lead to problems with the subsequent coats and finish.

“The best answer to this question will be one that factors in the environmental conditions, as well as the job schedule. In the final analysis, the minimum cure time your questioner was seeking is the time it takes for a scratch coat to set before receiving the brown-coats in a double-back application. That can be from a few hours to overnight; much longer and you need to start treating the scratch coat as a fully separate application and cure it fully before the brown is applied.

“The application of cement stucco is an artisan’s craft rather than a strict procedure, and therefore it is very difficult to give the ‘down to the minute’ answers that many design professionals are looking for.”

About the Author
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