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Faux Nail Pops

By: Donald E. Smith, CCS

I received a call from a drywall contractor in Georgia with 20-plus years in the business and a costly problem that has been going on for the past few years. He has tried in vain on his own to determine the root of the problem without success. One of the major drawbacks to solving problems is clear communication of the facts surrounding the problem. Gleaning the facts from an e-mail or a telephone conversation is not always easy. In this case, the closest description the contractor could provide was the appearance of "nail pops" several months after the finishing had been completed, and more often than not after the wall had been painted and the building had been occupied. This, of course, required the contractor to return and take corrective action as well as the painter returning to touch up the finished paint job—additional expense for both contractors. We had several discussions over the telephone and I still did not have a clear picture or understanding of the problem. (My job does not include making site visits to troubleshoot and solve problems.) It just so happens that I was scheduled to be in Atlanta for several days of meetings with two standards review groups of which I am a member. So without additional expense I was able to view the problem firsthand.


The contractor used glue and screws to attach the drywall in most cases to wood framing, but in a few cases metal studs were the supporting structure. After the final finishing, the surfaces were inspected and found to be smooth with no blemishes and acceptable for painting. Most of the work was performed in high end residential units. These units have large expanses of windows and are flooded with natural light. Under these circumstances, any blemish in the wall surface jumps out. After three to four months the contractor received a call back to correct what appeared to be nail pops. While nail pops is close to what occurred, the screws had not moved outward. The mud over the screw, almost a perfect circle, was standing proud about the thickness of a sheet of paper at the thinnest and the thickness of a mud knife blade at its thickest. There was no indication of the mud cracking at the screw head; the mud was just above the surface of the gypsum panel.


After looking at several building I was unable to detect a pattern to the occurrence of the "nail pops." After discussing the problem with several individuals on the manufacturing side and the inspection side, we came to the conclusion that the gypsum panels were in fact shrinking. Somewhere along the trail from the manufacturing plant to the distributor to the job site, the panels absorbed moisture. This is not at all unusual considering the possibilities for exposure to the elements as well as high humidity during this time span. This distribution trail combines with the possibility of exposure during the act of installing the gypsum under less than ideal conditions (translation: you have to start hanging drywall tomorrow even if the building is not closed and the proper environmental conditions are not in place). The region the contractor works in normally experiences high humidity, and without a controlled environment in which to install the drywall, the gypsum panels are more than likely to absorb moisture. In this case we are not talking about a significant amount of moisture, just enough to make the finished gypsum panels shrink and raise the fastener heads.


As to the solution to the problem there are several areas to address. First, talk with the general contractor about better methods to control the environment to establish and maintain the temperatures required. Make the general contractor aware of the potential problems to be expected when the proper environment is not maintained. Have the GC and the painter sign off on the finished drywall work. Increase the bid to cover the expected callbacks if the GC will not sign off on the work before turning it over to the painter. A word of caution just in case someone suggests testing the gypsum panels for moisture content: There are numerous types of moisture detection devices on the market. The readings derived from these devices are relative readings as opposed to the readings taken from wood. That is to say, you must first find a control sample of gypsum board and use this as the "control sample" for future readings.


About the Author

Donald E. Smith, CCS, is AWCI's director of technical services. Send your questions to him at smith@awci.org.

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