Q In AWCI’s Technical Manual No. 12-A, third edition, “Standard Practice for the Testing and Inspection of Field Applied Sprayed Fire-Resistive Materials; An Annotated Guide,” section 5.3.4.2 - B. reads “Fluted Decks. In the preselected area, lay out a 12-in. (300-mm) square and take four random, symmetrical measurements within the square, including one each of the following: valley, crest and sides and report as and average.” However, in appendix A.1 of the same publication, the instruction reads differently: “Layout a 12 in. x 12 in. (300 mm x 300 mm) square and take four random symmetrical measurements on each of the following: (1) valley (2) crest and (3) sides, for a total of 12 measurements.” Which is correct?

—J.D., Las Vegas, Nev.

A Both are correct, but some explanation may be needed. As is often the case, I knew there was a difference in the two passages, but I wasn’t entirely sure what the explanation for the difference was. So, as is my habit, I first looked up the referenced standard, in this case ASTM E605. I found that the first passage cited above from AWCI’s Technical Manual 12-A is, curiously enough, strikingly similar to the language in section 8.1.4.1 of ASTM 605—except that the ASTM standard parenthetically instructs the reader to see Note 1. Note 1 explains: “... some fire rat[ed] assem-

bles have different thickness requirements for crests and valleys of floor decks and should be averaged apart.”

To put a finer point on how AWCI’s technical committee on spray-applied, fire-resistive materials (the committee that authored the manual) arrived at the language found in appendix A.1, I called Rich Eaton, chairman of the committee when the manual was developed and during its several revisions. Eaton explains, as Note 1 suggests, that there are occasionally different thicknesses required for each surface (valley, crest, side) of the fluted deck, and therefore, each of those surfaces should have four measurements taken to render an average thickness of the fireproofing. (Four measurements are taken on flat deck surfaces for an average.) Three surfaces times four measurements gives a total of 12 measurements, as instructed in appendix of manual 12A, and meets the intent of Note 1 in ASTM E605. Since the field inspector may not necessarily know at the time of the inspection whether the fireproofing thicknesses on the various surfaces should be the same or not, better to err on the side of caution and follow the procedure described in appendix A.1.

A A portion of the exterior plaster being placed on a new building appears to have been subject to freezing temperatures within 24 hours after placement. A petrographic exam in accordance ASTM C856 was done on three samples. In the petrographer’s opinion, the plaster froze during hydration. The evidence cited is the presence of many micro-cracks and “crows feet” and unhydrated cement. Under what circumstances can the plaster be repaired and used? What are the procedures? What are the next steps to take to resolve this problem?

—From AWCI’s Netforum, at www.awci.org/netforum/awci/a

A Several experts weighed in on this item, but here is my distillation of those responses: It is possible that the freezing was superficial. Further testing may indicate whether the freezing and incomplete hydration compromised the physical properties (compressive and flexural strength) of the inner layers of the plaster. If the cement in the mix of the inner layers has sufficiently hardened, it may be possible to remove the softer spots and skim the surface out for improved aesthetics. However, if the physical properties of the base coats are marginal or lacking, there is a high probability that the whole system will eventually crack and break down. In which case, it is more cost effective to simply remove the affected plaster and replace it.

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