

## Building Inspector Reports on Decks

**Two years ago, Glenn Mathewson traded in his toolbelt and Skilsaw for a code book, and is now a general building inspector in Westminster, Colo.**

**PDB:** What's your background?

**Mathewson:** I spent eight years as a deck builder, and was a partner of Highpoint Decks, in Golden, Colo. I've worked with most of the material that was available at the time, and I've been reading *Professional Deck Builder* for years. I now see code issues I used to complain about from a different view. Some contractors complain about inspectors, but there are bad seeds on both sides.

**PDB:** How responsive are you to contractors' questions?

**Mathewson:** Very. I love to talk to contractors. I don't mean to sound arrogant, but I'd rather a contractor learned by talking to me than have him end up surprised by another inspector. I have an open phone policy, and am glad to answer questions. There's no joy in making someone tear out work.

At the caisson (footing) inspection, I'll ask the contractor if he has any questions about the rest of the deck. About half the guys take advantage of that opportunity. I've also done seminars at the local homebuilder's association.

**PDB:** What code do you work with?

**Mathewson:** Westminster uses the 2006 IRC, but other jurisdictions

nearby use anything from the 2000 IRC to the '97 UBC. It's confusing to contractors who work in different places.

**PDB:** How strict are you?

**Mathewson:** I'm a by-the-book guy, but that's a two-way street. Every requirement is based in code. So, I don't make exceptions, but I don't make my own rules, either. And lax inspectors do a disservice to contractors. They set contractors up for failure by overlooking issues that the next inspector they encounter may flag.

And I'm willing to be proven wrong. If you can show documentation that proves your point, that's fine. As an inspector, I'm thinking as if I'm up in front of a jury. If that happens, I want to be able to point to a document that backs me up.

**PDB:** What sort of documentation do you need to see?

**Mathewson:** There are four types of documentation building inspectors can accept. The first is a citation in the code that their jurisdiction uses. After that come the manufacturer's instructions, a sealed engineered design, or recognized third-party testing, such as an International Code Council Evaluation Service (ICC-ES) report. If the installation matches one of these documents, the inspector should pass it.

**PDB:** That all sounds good, but sometimes the code isn't as clear as it could be.

**Mathewson:** No, it isn't. A good example is ledger flashing. The code calls for "approved corrosion resistant" material, but doesn't say what that is. Aluminum flashing is corrosion resistant, but not when it's in contact with ACQ lumber. In the Denver area, some jurisdictions allow vinyl flashing or Ice and Water Shield, while others require copper.

A contractor can't assume that just because it was approved in the next county, it will be allowed where he's working today. In those cases, the call is up to the building inspector. Better to ask early on.

**PDB:** What are the most common violations you encounter?

**Mathewson:** Stair geometry. Contractors have a hard time with rise, run, opening sizes, what's a handrail, what's a guardrail, when a guardrail can be a handrail and when it can't. Stairs have to be built with differences no greater than  $\frac{3}{8}$  inch between risers or treads, and those are commonly exceeded.

One that creates some ugly situations is the requirement for safety glazing. Any glazing within 5 feet of the bottom tread or within 3 feet in any direction from any part of the stair must be approved safety glazing.

Contractors often don't consider that when they bid the job — they're building a deck, not replacing windows. It rarely gets caught at plan review, because the plans contractors bring in are for the deck, and don't show window and door locations. But

that part of the code kicks in, and they end up facing an unexpected cost.

**PDB:** Do you have any major concerns with current deck-building practices?

**Mathewson:** Ledger connections. The current code isn't clear on how to attach ledgers to the house. I'd say for deck building, that's the biggest hole in the code right now.

**PDB:** There are rumors that the ICC is likely to adopt prescriptive ledger attachment practices this spring.

**Mathewson:** That's good, but they won't be adopted by most jurisdictions until the 2009 edition. Then, most jurisdictions take a year to adopt new code editions, and the first iteration will probably need editing. In reality, we'll be lucky to see an effective version of those requirements before the 2012 IRC comes out.

**PDB:** What other aspects of deck building concern you?

**Mathewson:** Guardrails. I see a lot of custom-made guardrails, but I have no way of being sure they meet the 200-pound loading requirement in the code. I think a lot of custom guardrails do meet the requirement, and I like seeing that kind of workmanship.

And even the manufactured guardrails you can't be certain about. Yes, the manufacturer has tested them, and they meet the requirements. But the installation would have to be done exactly as prescribed by the manufacturer, with no variations.

There's just no sure way to test guardrails. I have seen some that could be torn down by hand, and those didn't pass. But beyond pushing on them to check for movement, there's not much more an inspector can do.

**PDB:** Every inspector I know has a nightmare story. What's yours?

**Mathewson:** Well, one sticks in my mind. I came for a framing inspection, and the first thing was that the ledger was attached to a brick-veneer wall. That's a clear violation. The deck columns were wrapped in brick veneer, and it covered up the post-to-beam connections, so there was no way to inspect them. The contractor had eliminated some caissons, so the beams were over-spanned. Oh, and they were built-up beams, and their splices didn't occur over posts.

In that case, an engineer had to become involved. The solutions included a welded tube steel frame to support the ledger. Its columns ran down the face of the brick veneer and were welded to haunches that were bolted to the foundation. The beams had to be flitch-plated.

What was really tough about that one was that the contractor left the homeowner to finish the job. I care about people, and I hate seeing that sort of thing. But it had to be fixed.

**PDB:** What advice do you have for contractors?

**Mathewson:** Get educated. Learn the code. Know the realities. "But I've been doing it that way for 30 years" doesn't mean it meets code. Learn the accepted standards of your industry, not just how other contractors do it.

Remember that building inspectors are human, too. They make mistakes. But pick your battles — fix the \$100 issues. It's not worth anybody's time to argue the minor stuff. But if it's a \$1,000 item, there is always an appeal process. If you're sure you're right, start the appeal. Sometimes, that alone is enough to get an inspector to rethink his decision. If he's honest, and you're right, it should end right there.

Buy a copy of the IRC. Keep it in the truck. Just seeing the code book on site can remind an inspector that you know the code, too. That earns respect. And be respectful. You don't have to go out of your way, just treat the inspector as you'd like to be treated.

Here's a major thing most contractors don't know: A passed inspection doesn't clear the contractor of liability. If the inspector misses something, the onus is still on the contractor to have done it according to code.

For example, most deck builders don't pull an electrical or mechanical permit. If the inspector who comes out is just a structural inspector, and isn't a mechanical or electrical inspector, there are a bunch of issues that could be missed.

Say there's an overhead electrical service. The level of the deck might be closer than code allows to that wire. Maybe some part of the deck blocks access to the main electrical disconnect. You've created a deadly situation. What if the deck blocks the make-up air intake for a combustion appliance, or its vent? An entire family could die from carbon monoxide poisoning.

Nobody wants those situations, and the ultimate responsibility is the contractor's. Be conversant with other codes, too — electrical, mechanical. Stay on top of how a deck affects the rest of the house. ♦

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