Fall Protection UPDATE

Training and awareness are the foundation of a successful fall protection plan

by Michael Davis

In 1996 I learned about OSHA's Fall Protection Guidelines the hard way — during an on-site inspection. I thought I had a pretty good handle on safety, and I thought the inspection was going well, too, until I found myself holding a fistful of citations. Before it was all over, I learned more than I had ever wanted to. And, sure enough, in 1999, OSHA got me again.

Being on the receiving end of a major OSHA citation was a threat to the very existence of my company. Perhaps you're thinking, "I've been building houses for 20 years, and I've never seen an OSHA inspector." Maybe so, but if one of your guys takes a fall that you could have prevented, he (or his widow) may well own your business before it's all over.

Allowing an employee to put himself in danger in violation of an OSHA Standard constitutes negligence on the part of the employer. The courts will tear you apart. If you're still tempted to bet that you'll never be inspected, think about what that decision could mean to you, your business, and your family. Whether you're a business owner or just a crew foreman, you have a legal responsibility to make yourself aware of the rules.

The Old Standard

Fall Protection Standard 29 CFR 1926, Subpart M, said that anyone working on a surface from which a 6-foot fall was possible must be secured by a belt and lanyard, and that any open-sided landing or platform must be protected by guardrails. This standard clearly interfered with productivity, and sometimes actually created a greater hazard. It was also simply impossible to comply with in certain cases, so in 1995 OSHA modified it to allow for alternative methods of fall protection (see "Fall Protection: Complying with OSHA's New Rules," 1/96).

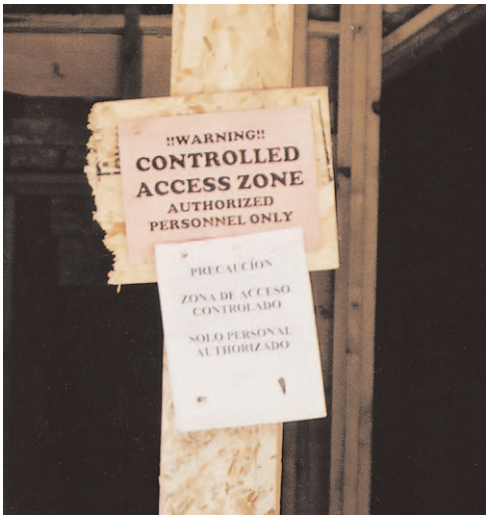

Figure 1. The first step in conforming with OSHA's alternative fall protection method is to establish a job site Controlled Access Zone and see that it's enforced.

But there were still problems — the directive did not clearly define "residential" construction, and everyone had a different interpretation.

Under the 1995 standard, you were required to have a written Fall Protection Plan created specifically for your company, listing by name the individuals who would administer the plan. It had to address the specific hazards that you might face and how you intended to deal with them, and it had to be site specific. If you built the same single-family home at four different locations, you'd need to rewrite the plan for each house.

In order to use an alternative method, you first had to show that the conventional method either created a greater hazard or was infeasible — both tough arguments to win.

The New Standard

In July of 1999, OSHA unveiled Standard 3-0.1A, the Plain Language Revision of the Interim Fall Protection Compliance Guidelines for Residential Construction. This has been a breath of fresh air for the construction industry.

The new guideline "permits employers engaged in certain residential construction activities to use alternative procedures routinely instead of conventional fall protection. No showing of infeasibility of conventional fall protection is needed before using these procedures. A fall protection plan is required, but it does not have to be written nor does it have to be specific to the job site." Even though it's not required to be written, I think a written plan is helpful for training and communication.

When is it residential? The new directive provides a fairly concise definition of "residential," as follows: "An employer is engaged in residential construction where the working environment, materials, methods, and procedures are essentially the same as those used in building a typical single-family home or townhouse." The standard goes on to say that residential construction is characterized by wood framing materials and methods. Some folks will still argue about what this means, but to me it is very clear: If it looks like a house and it's built like a house, it's a house.

The only other restriction is height: The maximum is three-and-a-half stories (including a basement, two finished levels, and an attic), or 48 feet measured from the lowest ground level, including any excavation, to the highest point of the structure.

Figure 2. A painted warning line 6 feet from the edge of the second-floor deck is an acceptable substitute for guard rails until the walls have been framed and erected. At that point, it's necessary to install guardrails where needed, as shown here.

Figure 3. No more walking on the plate. Wall plates must be tied together from ladders or scaffolds.

A question that I posed to OSHA officials was, "When does a four-story house become four stories? When you draw it on paper, or when you physically put the fourth story in place?" Maybe this sounds like a rhetorical question, but the answer is important — if it's not four stories until you frame the fourth story, then you could use alternative methods for the work on the first three floors. Unfortunately, the answers I got varied, depending on whom I asked. If you're quoting a job that at any point is greater than 48 feet above the lowest ground level, check with your local OSHA people so you'll know how to price the job and stay out of trouble if you get it.

Controlled Access Zones and other requirements. The new standard is aimed at getting workers and supervisors to recognize hazardous conditions, take corrective measures where necessary, and keep everyone who isn't directly involved out of harm's way. The rules for establishing a Controlled Access Zone (CAZ) are unchanged from the old standard, as are the requirements for designating a Qualified Person (QP) and a Competent Person (CP).

Designating a CAZ — a clearly defined area within which unauthorized personnel would be exposed to the danger of falling or being hit by falling objects — is basically common sense. Its actual

extent will depend on the work to be done. If a sheet of decking gets away from a framer on the roof, for example, it might travel some distance before hitting the ground. In general, we try to stay 15 feet out from the building on all sides, marking the area with signs and a yellow warning line (see Figure 1).

The QP is the person who designs your company's fall protection plan and approves any changes before they are put into practice. In my company, that's me. In yours, it should be whoever has the time and motivation to study the standard and evaluate how it applies to your operations.

The CP, on the other hand, is the key person for actually carrying out the plan. He or she must be capable of identifying existing and predictable hazards, and have the authority to take prompt corrective measures to eliminate them. It's also up to the CP to ensure that the plan is followed and that workers have the training their jobs require.

Training. The backbone of the new standard is training. Your people must be able to recognize unsafe conditions and report them. They need to know that the alternative-measures approach isn't always safe or appropriate, and understand that they should inform the CP before proceeding if they are in doubt.

Just putting the information out in front of your employees doesn't mean much if they don't learn it. What happens when the OSHA inspector walks over to your most lost-looking employee and asks to be directed to the crew CP? Or asks the worker if he's seen any unauthorized souls skipping through the CAZ this morning? He'd better know the right answers, or your goose is cooked.

Requirements for Specific Tasks

Exterior walls on the second floor of a building create some unique hazards. Because a finished second-floor deck is higher than 6 feet from the ground, it is effectively an open-sided platform. That ordinarily calls for guardrails, but the folks at OSHA realize that it makes no sense to frame up guardrails all the way around the perimeter of the floor system, only to take them down as the exterior walls are framed and erected.

Drawing the line. Instead, you may apply a painted warning line on the floor deck, 6 feet in from the unprotected edge (Figure 2). This creates a restricted area that is off-limits to everyone except those actually working within. It's up to the CP to monitor the situation and to make sure that workers inside the zone are aware of their proximity to the edge. Stack materials well away from the unprotected edge, and do as much cutting and prep work as you can on the safe side of the warning line.

Tying top plates together at corners and channels has to be done from sawhorses or ladders, not by walking on the plates (Figure 3). And don't even think about hooking a 100-foot tape on one end of an exterior wall and making layout marks while walking down the top plate backwards. Get in the habit of marking plates while the walls are still lying on the deck.

Floor framing. If you're going to use the alternative method while installing floor joists or trusses, you must first set up a Controlled Access Zone. (Keep in mind that any alternative fall protection activity must take place in a CAZ.) Set the first few joists or trusses from the ground, ladders, or sawhorse scaffolds.

Once you have set and secured enough joists or

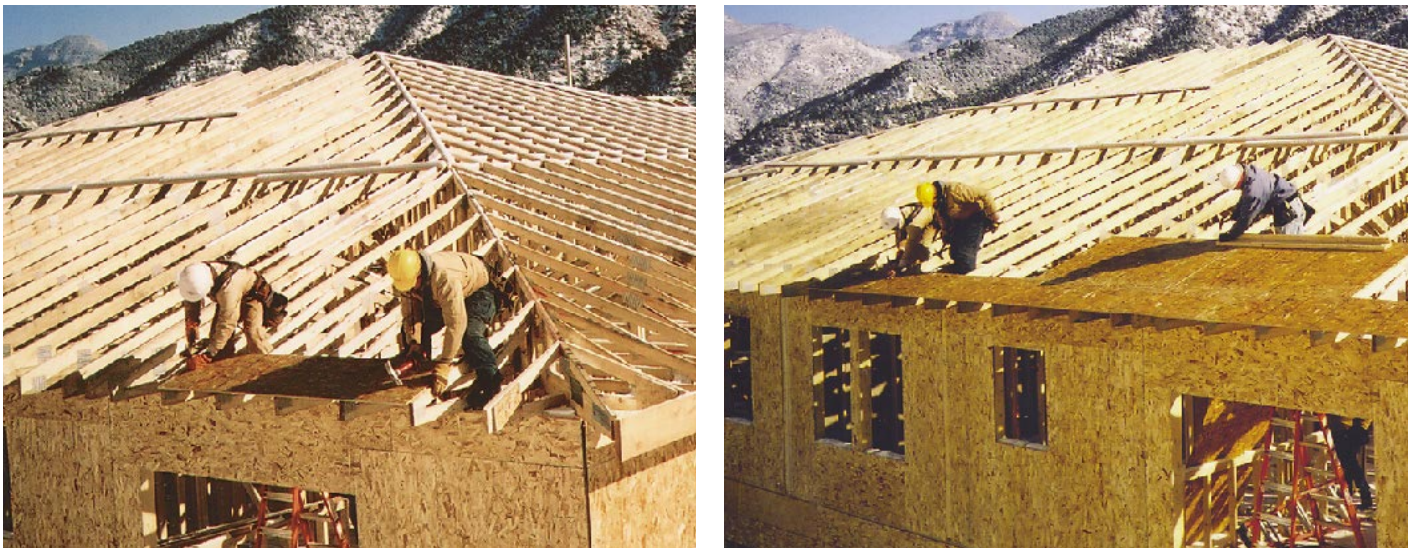

Figure 4. If the bottom row of roof sheathing is ripped to 2 feet wide, it can be installed by workers standing on the truss chords (left). Subsequent full-sized sheets and slide guards can then be safely installed.

trusses to accept a sheet of sheathing, lay some down to serve as a platform from which to start the work. The rest of the floor sheathing should be installed by trained employees, at first working from these sheets.

Like the floor joists, the first row of floor sheathing must be installed by workers on the ground, ladders, or sawhorse scaffolds. After the first row of sheathing has been installed, workers are permitted to work from the established deck.

Roof framing. When you get to roof trusses, the standard again requires you to install the first two trusses from sawhorse scaffolds or ladders. Once these two trusses are securely braced, your trained and designated workmen can climb onto the top plate and, bracing themselves inside the secured trusses, lean out to secure each successive truss.

It's pretty clear from this description that OSHA assumes that you'll be using a crane to set trusses. Unfortunately, that's not usually the case on small homes. Typically, trusses for a single-family home are just dumped out in front of the frame. Workers carry the trusses to an end wall, where they are handed up to two framers on the top plates. These men lay the first truss flat with its peak resting on the plate of the end wall, far enough inboard that it won't interfere with lifting additional trusses. The next truss is pulled up, dragged down the walls to the next layout, and laid flat, overlapping the first. This process is repeated with each successive truss until all the trusses are stocked from end to end.

When I interviewed OSHA representatives, they generally thought that this technique would be acceptable. Their reasoning was that as long as the workers are dragging the truss, they have the truss and each other to help them maintain their balance. Stocking the first truss at the end wall, before working into the building, also means that the workers never have to travel more than a few feet down the open top plate. In effect, overlapping trusses create a sort of deck, giving the workers added footing and creating a barrier to keep them from falling through to the floor below. Granted, workers can still fall to the outside of the building, but an experienced framer in this situation will always favor the safer side, making an outward fall unlikely. Nevertheless, if you use this technique, you should run it by your local OSHA officials and make sure it passes muster with them.

Sheathing. The standard says that once your roof trusses are in place, the bottom row of roof sheathing may be installed by workers standing in truss webs and leaning over the sheathing. I'd heard this system described before, but I could never quite get it straight in my mind. It always sounded like a pretty tough way to get a row of deck down, hanging on by your toes and leaning out 4 feet to nail. I am happy to report that I finally got clued in when I watched an NAHB safety training video. First you install a row of 2-foot-wide sheets as the first course of decking; then you run a slide guard on the deck and work from there (Figure 4).

Slide guards. The plain-language version of the guidelines relies heavily on the use of slide guards for protection during roof sheathing operations. The slide guard needs to be at least a nominal 2x4, with the $3^1/_2$-inch dimension perpendicular to the deck (Figure 5). The first slide guard has to run the full width of the eaves. On a pitch of 9/12 or less, you're required to have additional slide guards installed at 13-foot intervals up the slope of the roof. For roofs over 9/12, you need slide guards 4-feet on-center. I'm happy with the requirement for steeper roofs, but in my opinion, the 13-foot spacing is uncomfortably wide. When my guys are up there, I like to see slide guards 8-feet on-center, max.

Weather. The new standard also addresses the issue of inclement weather. It says that when adverse weather (such as high winds, rain, snow, or sleet) creates a hazardous condition, "operations shall be suspended until the hazardous condition no longer exists." If you can't suspend operations until the hazardous condition is completely gone — until spring comes, for example — you must suspend the use of any of these alternative methods. If it's slick and icy, you want the full deal — body harnesses, life lines, and lanyards.

Figure 5. Spacing of slide guards is determined by roof pitch. Regardless of spacing, though, individual guards must be at least a nominal 2x4 on edge, set perpendicular to the slope.

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