

Worker Protection

Moving Beyond Basic OSHA Compliance

By Vince Gallagher

Some corporate managers think of OSHA compliance as a nuisance or an unnecessary economic burden. They may reluctantly comply, but remain unconvinced about doing anything beyond what an OSHA standard requires. In some cases, however, mere compliance is not enough and, in the long run, is costly in several ways. Thus, OSH professionals should advocate for feasible hazard controls that will prevent worker injury and death even if no OSHA mandate exists. This article examines several situations in which companies that do nothing more than comply with a standard may expose workers to danger.

Fall Hazards: Steel Erection

As Figure 1 (p. 35) shows, ironworkers suffer more fatal injuries from falls than any other construction craft. However, the current OSHA standard [29 CFR 1926.760(a)(1)] requires standard fall protection, which consists of guardrails, safety nets or a fall arrest system, for ironworkers beginning at 15 ft. The agency does not require fall protection for ironworkers who work below 15 ft, despite the fact that serious injury and death can result from falls of less than 15 ft (NIOSH, 2000). Furthermore, OSHA does not require standard fall protection for workers performing connecting work or installing decks at elevations between 15 and 30 ft [29 CFR 1926.760(b), (c)]. However, it has been shown to be economically and technologically feasible to provide ironworkers with 100% fall protection for all exposures beginning at 6 ft above ground level.

Connectors

In performing connecting work, an ironworker places and connects elevated structural members and/or components (29 CFR 1926.751). The worker stands or sits on the structural steel to guide the beam in place, then connects it with a few bolts and nuts. Another crew of ironworkers then comes back to “bolt up”—that is, to install more than a dozen bolts and nuts while staying in one place. OSHA requires workers who bolt up at 15 ft or higher to be protected by standard fall protection [29 CFR 1926.760(a)(1)].

However, connectors working between 15 and 30 ft must be provided with a personal fall arrest system, positioning device system or fall restraint system, and wear the equipment necessary “to be able to be tied off” or be provided with other fall protection [29 CFR 1926.760(b)(3)]. They do not have to

actually be connected to a fall arrest system nor use other fall protection. In other words, to comply with OSHA standards, the ironworker does not have to be protected from falling. S/he can wear a full-body harness but not be connected to a fall arrest system.

OSHA gives this exemption because ironworkers have testified that they feel there could be a greater danger of being connected and anchored with a fall arrest system during a time when they receive an uncontrolled incoming load of structural steel from a crane (OSHA, 2001).


If the crane operator overshoots or moves the load unexpectedly, the ironworker wants to be able to move away quickly from the load that could otherwise push the ironworker off the steel.

However, an ironworker could achieve the same mobility by using a beamer (a portable anchorage connector that rolls along the upper or lower flange of the beam) or connecting his/her lanyard to a horizontal lifeline installed on the horizontal I-beam before it is raised. A beamer allows an ironworker to walk and work while anchored to it.

IN BRIEF

- This article reviews specific instances where simply complying with OSHA standards, such as those related to fall protection requirements for steel erection, scaffolds, backup alarms and other hazards, can leave workers exposed to danger.
- OSH professionals who work for companies that have a policy to do no more than what OSHA requires face a great dilemma and may face tough questions should an employee be injured and litigation arise.
- Ultimately, OSH professionals should advocate for controlling hazards even when not required by OSHA standards because it is good business and saves lives.

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While not required by standard, it is economically and technologically feasible to provide ironworkers with 100% fall protection for all exposures beginning at 6 ft above ground level.

In addition, stanchions and a lifeline could be installed on the horizontal beam before it is raised. This will give the connector a place to attach the lanyard to the lifeline and provide mobility.

Another option is to have the worker use an articulating and telescoping boom lift or scissor lift while connecting beams. It is entirely feasible to provide reliable 100% fall protection for connectors yet the regulation does not require standard fall protection until the ironworker is working 30 ft above the lower surface.

Deck Installation

As with connectors, OSHA recognizes the feasibility of reliable standard fall protection for deck installation at 30 ft and higher [29 CFR 1926.760(c)]. OSHA requires standard fall protection for deck installation for all exposures 30 ft and higher, but not for exposures 15 to 30 ft [29 CFR 1926.760(b)].

Decking consists of corrugated sheets of metal that are laid over joists to form a building's floor or roof. If it is feasible to provide 100% fall protection at 30 ft and above, it is also feasible to provide fall protection below 30 ft.

Respected safety authorities have long recognized the dangers left unchecked by the steel erection

standard. For example, in 1986, OSHA published a proposed rule to change the fall protection standard for construction. The agency hired a consultant to study the economic impact of the proposed "6-ft fall protection rule" in Subpart M. The study concluded that the rule's implementation would have no adverse economic impact on the steel erection industry if adopted (Hill, 2004). The 6-ft rule requires the use of standard fall protection devices.

Associated General Contractors (AGC) of America also recognizes the danger inherent in the standard. AGC advocates for the 6-ft fall protection rule for all construction workers, including steel erectors. AGC is keenly aware that 100% fall hazard control is a feasible control. On Aug. 27, 2001, AGC's Stephen Sandherr (2001) wrote the following in a letter to then OSHA Administrator John Henshaw:

AGC has long been the industry leader in this critical field. Improving working conditions for the industry was one of the first commitments that its founding fathers made back in 1918. General contractors have worked long and hard over many years to improve their work sites and they have made significant progress. Reinforcing the commitment, AGC signed a Partnering Charter with OSHA in March 1998. AGC and OSHA have also signed an agreement to implement

the Construction Health and Safety Excellence (CHASE) Partnering Program which requires, among other things, all workers be protected from falls at 6 ft [emphasis added]. . . . AGC believes that OSHA has not met its obligation to protect all employees from fall hazards. This final rule puts connectors' lives in serious jeopardy. A fall from 15 to 30 ft is likely to cause a greater injury than a fall from 6 ft. If a connector falls to his/her death or is seriously injured, who will be responsible? AGC believes that all workers should be tied off or otherwise protected at 6 ft, regardless of the type of work being performed. OSHA has already recognized that it is feasible for steel erectors to ensure 100% fall protection. In 1998, OSHA even gave special recognition to the Steel Erection Safety Association of Colorado, in part, because this group of steel erectors was using 100% fall protection on its projects. . . . AGC believes that OSHA should fulfill its responsibility to protect all workers.

Other respected safety voices in the U.S. testified during OSHA hearings that 100% standard fall protection is feasible for all steel erection work as evidenced by the fact that they have been requiring it for years. When the steel erection standard was debated, many major general contractors urged OSHA to require 100% fall protection for all ironworkers above 6 ft because they found it was technologically feasible, morally responsible and cost saving (OSHA, 2001). For example:

- Kellogg, Brown and Root testified during OSHA hearings that it has had a 6-ft fall protection policy for several years.
- U.S. Bellows Construction Corp. testified that its 6-ft fall protection policy for steel erection increased productivity, decreased insurance costs and saved lives.
- CENTEX Construction Co. testified it only hires subcontractors who use a 6-ft fall protection policy.
- Turner Construction Co. noted that it would prefer OSHA to adopt the 6-ft rule for steel erection.

So Why the Compromise?

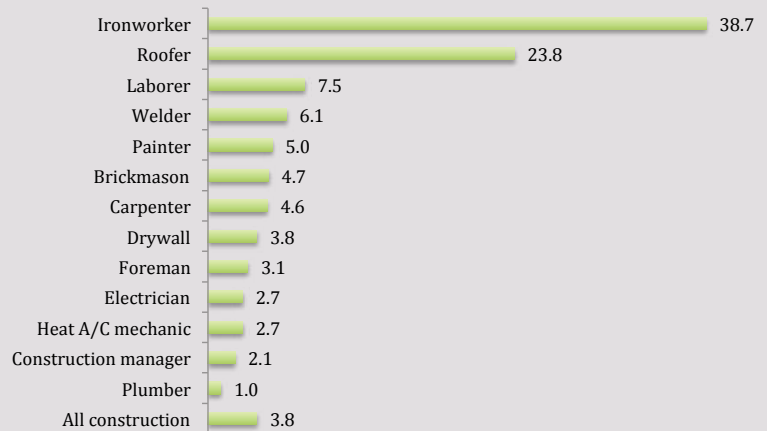
In announcing the rule, OSHA (2001) cited three reasons for not requiring fall protection beginning at 6 ft. First, the agency noted that injury data were "not clear" regarding how much of a need there is to provide fall protection below 15 ft. Essentially, the agency justified permitting exposures below 15 ft because of inadequate injury data. However, on Aug. 9, 1994, OSHA stated the following with regard to fall protection:

Based on the Bureau of Labor Statistics' injury and fatality data . . . OSHA believes that employees performing construction work on walking and working surfaces 6 ft or more above lower levels are exposed to a significant risk of injury and death.

Second, OSHA said it permits ironworkers to be exposed to falls because "many situations" do not permit the use of a fall arrest system (full-body harness with lanyard attached to a lifeline or anchorage point) below 15 ft. It is true that while using a fall ar-

Figure 1

Rate of Deaths From Falls



Note. Number of deaths per 100,000 full-time workers. Selected construction occupations, 2003-2005 average. Data from Chart 37b, *The Construction Chart Book, 4th edition*, (p. 4), by CPWR—The Center for Construction Research and Training, 2008, Silver Spring, MD: CPWR.

rest system for some falls below 15 ft, the fall would not be arrested before a worker strikes a lower surface. However, a fall arrest system is not the only means of fall protection that could be used. Ironworkers could use restraint devices, or work from scaffolds, scissor lifts or other personnel lifts. In fact, scissor lifts are commonly used by conscientious steel erectors and required by conscientious general contractors/construction managers. OSHA could have required fall protection beginning at 6 ft and stated that scissor lifts, personnel lifts, restraints and scaffolds were acceptable forms of fall protection.

Third, OSHA stated that ironworkers could be exposed to falls up to 15 ft because steel erectors often use scaffolds and work platforms at heights between 6 and 15 ft. In essence, the agency indicated that it did not require the use of fall protection below 15 ft because scaffolds or work platforms are often used. However, that is not a reasonable explanation to justify not requiring scaffolds, work platforms or other means of fall protection to be used between 6 and 15 ft.

In the rulemaking, the agency also notes that ladders are "often used" as a justification for not requiring fall protection. However, the use of ladders in ironworking is often a dangerous practice. Ironworkers sometimes use heavy impact wrenches and crowbars while working from ladders. In such cases, the entire work platform consists of a 12-in.-long rung that is 1 in. in diameter. With both hands off the ladder, the ironworker pushes and pulls and exerts forces to the ladder. A slip is likely to result in serious injury or death. Thus, the author believes that OSHA should have prohibited the use of ladders as a work platform for tasks that require the use of tools and/or two hands.

Ellis (1993) points out the following regarding the dangers of working from ladders:

OSH professionals must advocate for worker injury prevention by showing that safety pays.

Portable ladders have rungs with very little structure to stand on, and so require a worker to use at least one hand at all times for securely maintaining balance. This means that ladders can be dangerous when used for work involving hands, either for lifting, carrying, holding, manipulating, or other purposes, particularly while moving. (p. 194)

NSC (1997) also recognizes the danger of working from ladders.

The use of ladders at any time when applied for work and not solely access to another level calls for serious consideration of appropriate fall protection. The higher the ladder is used, the more fall protection consideration must be given.

However, OSHA does not prohibit working from portable ladders even at heights of 50 ft or more above ground level. However, many conscientious owners, general contractors and construction managers require steel erectors to provide 100% fall protection for all exposures of ironworkers above 6 ft.

100% Fall Protection vs. OSHA Compliance

In an incident about which the author has personal knowledge, an ironworker without fall protection fell while performing decking work 22 ft above the ground. He had worked on many other jobs on which the same general contractor required 100% fall protection for all ironworkers.

During a deposition, the steel erector's superintendent was asked why he did not require fall protection. He said it was because OSHA standards did not require it. When asked why he required it on some jobs and not others, he explained that this job was run with an owner-controlled insurance policy. That is, the project owner's insurance company wrote one policy for all of the workers' compensation and liability insurance for all the contractors on the project. Owner-controlled insurance policies require 100% fall protection for all elevated work, including ironworkers.

The superintendent explained the reasons he provides fall protection on some jobs and not on others is because many times the project owner selects the lowest bid without regard to safety performance or safety plans. If the steel erector were to include the costs of 100% fall protection, its bid would likely be higher than that of those companies that did not include those costs. Simply put, the bid would not be competitive because of the added costs of using scissor lifts, articulating boom lifts and nets, and installing and using fall arrest systems.

Safety Begins at the Top

Before work begins, the project owner should make it clear to the general contractor or construction manager that s/he should only consider bids that include the full costs for working with 100% fall protection. Doing otherwise stacks the deck against ironworkers.

Safety professionals who work for owners, general contractors, construction managers or steel erectors know of the situations in which simple compliance

does not protect ironworkers from falling. If the project owner does not require 100% fall protection, the safety professional, like the ironworker, is caught in the middle. If a connector or deck installer without fall protection falls and is injured, the safety professional, superintendent of the general contractor or construction manager may face some difficult questions in front of a jury. For example:

- Do you recognize that a fall hazard of less than 30 ft could result in quadriplegia, paraplegia, brain damage or death?

- Is it acceptable to you as a safety professional that ironworkers work below 30 ft without fall protection when they could be provided reliable fall protection by means that are economically and technologically feasible?

- If it is feasible to control fall hazards related to connecting and deck installation with standard fall protection at 30 ft, is it not also possible to control those same exposures at heights less than 30 ft?

- Can you explain to the jury why it is that on some jobs on which you serve as safety professional your company requires ironworkers performing decking and connecting work at heights between 15 and 30 ft to have fall protection and on some projects the company does not?

To avoid being in this position, the OSH professional should try to convince owners of the economic and ethical reasons to require 100% fall protection. A safety professional who works for a general contractor or construction manager should likewise make the case for 100% fall protection. When the feasibility and the merits of this approach are made clear and are documented in writing, it is more likely to be honored.

Fall Protection: Scaffolds

Another standard that permits unnecessary exposure to fall hazards is the OSHA scaffold standard. Under this standard, employees may work on scaffolds without guardrails or other means of fall protection at heights up to 10 ft [29 CFR 1926.451(g)(1)]. For example, a worker on a scaffold at 9 ft above ground without fall protection is not an OSHA violation. Before the standard was revised in August 1996, it required guardrails at 4 ft above ground [29 CFR 1926.451(a)(4): "Scaffolds 4 ft to 10 ft in height having a minimum horizontal dimension in either direction of less than 45 in. shall have standard guardrails installed on all open sides and ends of the platform"]. Most conscientious contractors require guardrails on scaffolds at 4 or 6 ft, but some do only what OSHA specifically requires.

Safety Monitors

Fall protection on low-sloped roofs presents another concern. Instead of requiring standard fall protection for all workers on low-sloped roofs, OSHA standards permit a warning line system and safety monitoring system to be used instead. A warning line can consist of ropes, wires or chains supported by stanchions and erected within 6 ft of the edge.

The safety monitor is a person responsible for watching the workers and warning them of fall haz-

ards when they work within the edge and the warning line. The monitor must be working on the same surface close enough to verbally communicate with the workers. S/he also must have no other duties that would distract from watching the workers exposed to the fall hazard. The safety monitor's job is to watch those working within 6 ft of the edge of the roof (that is, while exposed to the danger of falling) and warn them when they are in danger of falling.

However, workers are always at risk of falling when they are within 6 ft of the edge of a fall hazard. The fact that someone watches a worker while exposed to a fall hazard does not mean that s/he will be able to warn the person before a slip or a trip results in a fall. The warning may come too late to prevent injury.

Moving Vehicles

Basic compliance is potentially dangerous in several other areas as well. For example, OSHA 29 CFR 1926.602(a)(9)(ii) states:

No employer shall permit earth-moving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

One deficiency is that this standard does not apply to all vehicles on construction sites with obstructed views to the rear; it only applies to earth-moving and compacting equipment. Furthermore, the standard does not require a backup alarm. It permits a vehicle to be operated in reverse with a signal person. However, it is likely that at some point a vehicle without a backup alarm will be operated without a signal person, leaving workers exposed to catastrophic injury. In addition, it is dangerous for trucks with obstructed views to the rear with backup alarms to back up without a signal person, yet the regulation allows it. It is also dangerous to expect that a spotter will be used each time a truck reverses.

The safer approach is to equip all vehicles that have an obstructed view to the rear with safety devices (e.g., sensors, rear-view cameras) that reduce the risk of run-over.

Ladders

Many workers have been seriously injured in falls from ladders that have slid to the side or fallen backward. However, OSHA does not require all ladders to be secured. OSHA 29 CFR 1926.1053(b) (6) states, "Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement." Conscientious construction managers require that all ladders be secured against accidental displacement, but the standard itself does not require that all ladders be secured.

Conclusion

Most current OSHA standards were adopted from ANSI standards promulgated before 1970.

While many ANSI standards have since been updated to reflect new practices and technologies, many OSHA standards have not, due in part to the lengthy rulemaking process. Some current OSHA standards are silent about hazards that could lead to serious injury or death (e.g., exposures to extreme heat and cold, ergonomic hazards, manual lifting tasks, industrial toxins), while proposed standards that would address known hazards are stuck in the rulemaking process.

OSH professionals know that while many standards are effective, it simply may not be correct to state, "It complies with OSHA so it is safe." Simple compliance sometimes permits dangerous exposures to remain. OSH professionals must advocate for worker injury prevention by showing that safety pays. The best way to convince industrial decision makers to spend the money to control hazards is to show them that it is in their economic interest to prevent injury.

When a worker is injured because of exposure to a hazard for which there is no OSHA standard, an OSH professional has an opportunity to demonstrate in concrete terms why the company would have been wiser to spend the money to control the hazard. The cost of the control will be far less than the costs associated with serious injury or death. However, OSH professionals need not wait until a tragedy has occurred to show that it is technologically feasible and cost effective to control hazards that could produce serious injury or death—whether OSHA requires it or not. **PS**

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