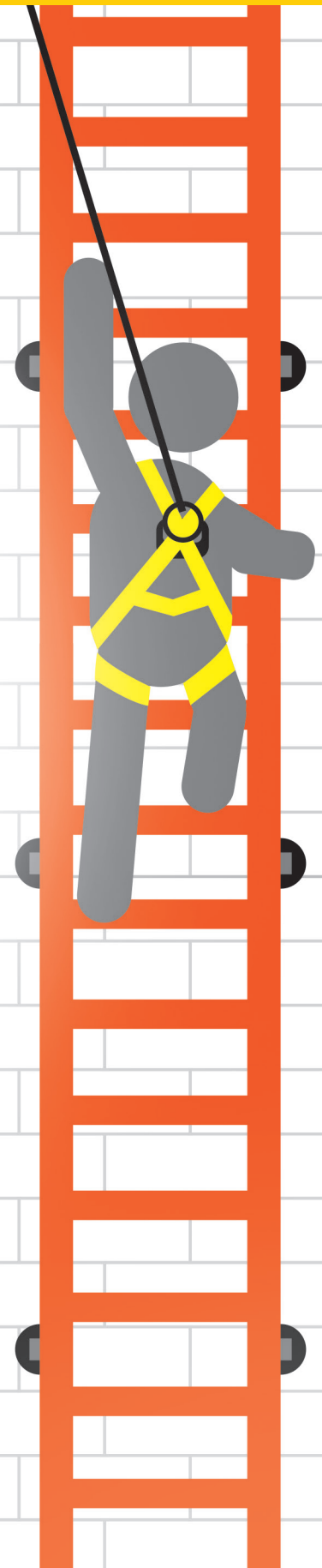


Fall Protection:

Understanding the new general industry options



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Falls from elevations occur in all occupations and in a variety of work settings—from the employee washing windows 40 feet from the ground to the stock clerk retrieving goods from a shelf using a ladder. These are only two examples of the many tasks that can result in employee injury or death caused by an employer's failure to recognize fall hazards, use appropriate fall protection equipment, or take action to abate fall hazards in their workplace.

This is due to a variety of reasons, including the fact that the Occupational Safety and Health Administration (OSHA) has provided little in the way of clear, concise requirements ... until now. As of January 17, 2017, general industry employers can utilize several fall protection methods and systems in their workplaces. Understanding all of these options will help ensure your employees receive a level of fall protection that is both effective and necessary.

Guardrail systems

Guardrails – also called standard railings – have been the primary means of preventing employees from falling to lower levels in general industry for decades. This fall protection method is still allowed under new 29 CFR 1910 Subpart D, “Walking-Working Surfaces;” however, some guardrail requirements have changed. OSHA says this was done to reflect current technology and work practices, and ensure consistency throughout general industry workplaces.

Guardrails are still allowed under the new rule.

For example, guardrails used to have to be 42 inches in height, but now can be 42 inches plus or minus 3 inches, and even exceed 45 inches under special circumstances. As such, the final rule does not allow existing guardrails that are less than 39 inches in height. All associated OSHA guidance (e.g., Letters of Interpretation, Directives, etc.) previously allowing guardrails to have a minimum height of 36 inches have been rescinded.

Guardrails may be used as specified under 1910.28, “Duty to have fall protection and falling object protection.” This includes, but is not limited to, the following:

- Hoist areas,
- Holes and openings,
- Runways and similar walkways,
- Dangerous equipment,
- Dockboards,
- Stairway platforms, and
- Unprotected sides and edges (e.g., loading docks, platforms, mezzanines).

Additional guardrail system requirements address construction, strength, and deflection limits.

Fall protection must be provided at four feet and above in general industry.

Handrails and stair rail systems

Handrails and stair rail systems are not the same. Under 1910.21(b), OSHA defines a stair rail system as “a barrier erected along the exposed or open side of stairways to prevent workers from falling to a lower level,” while handrails are rails used to provide workers with a handhold for support. A stair rail system can be used as a handrail, but a handrail cannot be used as a stair rail system.

Handrails and stair rail systems must be used as fall protection on flights of stairs having at least three treads and at least four risers as described in Table D-2, “Stairway Handrail Requirements,” under 1910.28(b)(11). These requirements are dependent upon stairway width and the number of enclosed sides. For example, on a stairway more than 44 inches wide, but less than 88 inches wide, there must be one handrail on each enclosed side, and one stair railing on each open side.



Additional handrail and stair rail system criteria are set forth in 1910.29(f). These requirements cover height, finger clearance, surfaces, stair rail openings, handholds, projection hazards, and strength.

Covers

Employers may use covers to protect workers from falling into a hole in floors, roofs, skylights, roadways, manholes, pits, and other walking-working surfaces.

Any cover used must be capable of supporting, without failure, at least twice the maximum intended load that will be placed on it. In other words, if you anticipate that an employee will walk across a cover, it must be able to support the worker, as well as any equipment, tools, materials, and vehicles the worker may be carrying or using. This limits the choice of materials used to construct covers.

Also, covers must be firmly secured at all times to prevent accidental displacement. This can be caused by a number of factors, including wind, flooding, ice, and snow. Heavy equipment running back and forth over covers also can loosen or displace them.

Ladder cages and wells

Under old Subpart D, fixed ladders of more than 20 feet to a maximum unbroken length of 30 feet had to be equipped with a cage or well. Cages and wells are fastened to the ladder's side rails enclosing the employee in the climbing area of a fixed ladder. This was the required means of fall protection.

OSHA says there is wide recognition that cages and wells neither prevent workers from falling off ladders nor protect them from injury when a fall occurs. Cages and wells simply

contain employees in the event of a fall and direct them to a lower landing. For this reason, OSHA is phasing out the use of cages and wells as fall protection on fixed ladders.

By November 18, 2036, all fixed ladders that extend more than 24 feet above a lower level must be equipped with a ladder safety system or personal fall arrest system. This means that some existing fixed ladders will have to be replaced to meet this new requirement. Fixed ladders that have a cage or well, but not a ladder safety system or personal fall arrest system, can be used until either the ladder, cage, or well (or a portion of it) is replaced or November 18, 2036, whichever comes first.

Nearly 50,000 lost-workday injuries from falls to a lower level occurred each year between 2006 and 2012, according to the Bureau of Labor Statistics.



Ladder safety systems

A ladder safety system is designed to prevent a worker from hitting a lower level by eliminating or reducing the possibility of falling from a ladder. It usually consists of a carrier (i.e., lifeline), safety sleeve, lanyard, connectors, and body harness. The carrier is a rigid or flexible track attached to or immediately adjacent to fixed ladders for worker use. The safety sleeve is a moving component that travels on the carrier.

The ladder safety system must be designed in such a way that it does not require a worker to continuously hold, push, or pull any part of the system. This allows the worker to move up and down the fixed ladder with both hands free for climbing. OSHA says this also allows a worker to perform a task when they stop climbing.

Additional ladder safety system requirements are outlined in 1910.29(i).

Safety nets

Another new fall protection system available to employers are safety net systems. Safety nets are commonly used in the construction industry when working on bridges and large structures to protect workers from hazardous vertical drops. Under 1910 Subpart D requirements, safety nets are allowed to be used to protect workers on several types of elevated walking-working surfaces, including:

- Unprotected sides and edges,
- Wall openings, and
- Low-slope roofs.

To ensure that the requirements for safety nets used in general industry are consistent with, and are as protective as, the construction requirements, OSHA requires employers to follow the construction criteria and practice requirements under 1926 Subpart M, “Fall Protection.”

Designated areas

For years, the required fall protection on roofs were either guardrails or personal fall protection. Both of these systems are often infeasible or impractical, however. Now, employers have another option: designated areas.

A designated area can only be used on a low-slope roof which OSHA defines as a roof that has a slope less than or equal to a ratio of 4 in 12. This means a vertical rise of 4 units of measure (e.g., an inch, foot, or meter) to every 12 units of that same measure of horizontal run. In industry, low-slope roofs are often referred to as “flat roofs.”

There are limitations to the use of designated areas beyond this. Specifically, for any work that has to be done less than six feet from the roof edge, conventional fall protection has to be used. A designated area is NOT allowed in this circumstance.

If the work that needs to be done is at least 6 feet from the edge, then a designated area may be used. Between 6 and 15 feet from the roof edge a designated area can be used, but only when the work is both temporary and infrequent. For work that is 15 feet or more from the roof edge, a designated area can be used for any work – the frequency or duration have no relevance.



A designated area must be delineated by a warning line. The line has to be constructed out of rope, wire, tape, or chain that is as close to the work area as possible. The warning line must:

- Have a minimum breaking strength of 200 pounds,
- Have a height of 34 to 39 inches at its lowest point, and
- Be clearly visible from 25 feet away.

If a designated area sounds like a better option than what you are currently doing to conduct work on roofs, then you need to very carefully review 1910.29(d).

Personal fall protection

Another means of fall protection includes personal fall protection. This is familiar to most employers already, but under new Subpart D, OSHA says this includes three specific options:

- **Personal fall arrest** -
Used to arrest a worker from falling to a lower level when a fall occurs.
- **Travel restraint** -
Used to limit a worker's travel to prevent exposure to a fall hazard.
- **Positioning devices** -
Used to support a worker in a fixed position.

OSHA added new section, 1910.140, to Subpart I, “Personal Protective Equipment,” that addresses these three types of personal fall protection systems. The section establishes requirements for the design, performance, use, and inspections of each system and system components (e.g., body harnesses, lifelines, lanyard, anchorages).



Know the requirements for the design, performance, use, and inspections for EACH type of system

OSHA says that damaged or worn components on personal fall protection systems are a fall hazard.

Also included in this section are two non-mandatory appendices that provide information to help employers select, test, use, inspect, and maintain these systems.

Personal fall arrest

Personal fall arrest is defined as a system that arrests an employee in a fall. This consists of a body harness (body belts are not allowed), anchorage, and connector (e.g., lanyard, deceleration device, lifeline, or combination). Many employers use personal fall arrest systems currently.

Travel restraint

Travel restraint is a system used to eliminate the possibility of an employee going over the edge of a walking-working surface. It limits their movement and therefore prevents exposure to fall hazards. This has been commonly referred to as fall restraint in general industry.

Positioning devices (work-positioning systems)

Positioning devices allow an employee to be supported on an elevated vertical surface, like a wall or window sill, so that work can be done with both hands free. The worker is in a fixed position and cannot move as one can with either a personal fall arrest or travel restraint system.

Conclusion

Before making a decision on fall protection, consider the hazards in your workplace. Evaluate the criteria, features, and benefits of each method and system now available to general industry employers. Then choose the most effective approach for protecting your employees from falls.

About the Author

Jennifer Stroschein, J. J. Keller & Associates, Inc.

Jennifer joined J. J. Keller & Associates, Inc. in 1998 with a background in compliance with government regulations and experience in scientific sampling, analysis, research, and reporting. As Editor – Workplace Safety, Jennifer is responsible for providing timely, accurate information and technical support to workplace safety professionals regarding a variety of issues. Her areas of specialty include audits and inspections, incentive programs, walking-working surfaces, emergency eyewashes and showers, and exit routes. In addition to creating content for J. J. Keller publications, Jennifer's work has been published in *ISHN*, *BIC Magazine*, *Occupational Health & Safety*, and *EHS Today*, among others.

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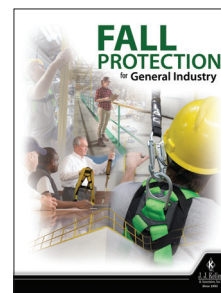
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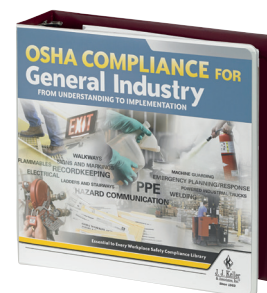
Fall Protection for General Industry

This program is designed to help employees understand OSHA fall protection requirements under the Walking-Working Surfaces Rule and how their job responsibilities may be impacted under the new standard. The program explains how injuries by fall and falling objects occur; summarizes employer requirements to protect workers from fall hazards; identifies various forms of fall protection and scenarios when each would be appropriate; and describes ways to help prevent falls in the workplace. Program available in DVD, Video Training Book, Online Courses, and Pay Per View formats.



OSHA Compliance for General Industry: From Understanding to Implementation

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