

MODULE 1 – INTRODUCTION TO FALL PROTECTION

Learning Objectives

- Recognize the importance of fall protection
- Implement reporting of fatalities and catastrophes
- Explain employer responsibilities, workers' right, and whistleblower protection
- Define qualified and competent persons
- Identify training requirements for a competent person

Why is fall protection important?

Falls are the leading cause of death in construction. One of every three construction fatalities are as a result of falls. Falls are among the most common causes of serious work related injuries and deaths. Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls.

There are several ways employers can protect workers from falls, including using conventional means such as guardrail systems, safety net systems and personal fall protection systems, the adoption of safe work practices, and the provision of appropriate training. The use of warning lines, designated areas, control zones and similar systems are permitted by OSHA in some situations and can provide protection by limiting the number of workers exposed.

Whether conducting a hazard assessment or developing a comprehensive fall protection plan, thinking about fall hazards before the work begins will help the employer to manage fall hazards and focus attention on prevention efforts. If personal fall protection systems are used, attention should be given to identifying attachment points and to ensuring that employees know how to properly use and inspect the equipment

According to the US Center for Disease Prevention, falls are the number one cause of construction worker fatalities. In addition, the Construction FACE database of the National Institute on Occupational Safety and Health shows that between 1982 and 2015, 20 percent of all construction fatalities occur in the worker's first two months on the job.

Falls cause more deaths in construction than any other hazard. In 2011, falls accounted for over a third of the 721 total construction deaths. Workers performing tasks 6 feet or more above lower levels are at risk of fatal falls or serious injuries. In 2016, the Bureau of Labor Statistics (BLS) reported that 991 construction workers died on the job, with 38.7 percent of those fatalities resulting from falls.

What can be done to reduce falls?

OSHA requires that fall protection be provided at elevations of four feet in general industry workplaces, five feet in shipyards, six feet in the construction industry and eight feet in longshoring operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance.

To prevent employees from being injured from falls, employers must:

- Guard every floor hole into which a worker can accidentally walk (using a railing and toe-board or a floor hole cover).
- Provide a guard rail and toe-board around every elevated open sided platform, floor or runway.

- Regardless of height, if a worker can fall into or onto dangerous machines or equipment (such as a vat of acid or a conveyor belt) employers must provide guardrails and toe-boards to prevent workers from falling and getting injured.
- Other means of fall protection that may be required on certain jobs include safety harness and line, safety nets, stair railings and hand rails.

OSHA requires employers to:

- Provide working conditions that are free of known dangers.
- Keep floors in work areas in a clean and, so far as possible, a dry condition.
- Select and provide required personal protective equipment at no cost to workers.
- Train workers about job hazards in a language that they can understand.

Fatal Fact #1

A full time carpenter was working on the second floor of a wood framed (new construction) residential house, when he fell more than 20 feet through an unguarded stairway opening to the concrete basement floor. He was killed in the fall from fatal head and internal injuries.



Fatal Fact #2

A worker was installing vinyl siding on a two story town home. He was using a ladder that was placed on top of a scaffold. While standing on the top step of the ladder, the worker overreached to one side and the ladder overturned. He fell nearly 20 feet to the driveway below. He died later that day from injuries caused by the fall.

Fatal Fact #3

Four workers were installing sheet metal steel decking on a pre-engineering building. As one of the workers walked down the roof, he lost his footing and fell through an opening. He died the next day from injuries caused by the fall.





Fatal Fact #4

Two workers were re-roofing a two story home with a pitched roof. One of the workers was close to the edge of the roof. As she reached to pick up another shingle, she lost her balance and fell more than 20 feet to the driveway below. She died instantly from her injuries

What happens when someone gets hurt?

Both employees and employers have responsibilities when someone gets hurt:

Employees:

- You have the right to notify your employer or OSHA about workplace hazards.
- You have the right to keep your name confidential.
- You have the right to request an OSHA inspection.
- You have the right to participate in that inspection.
- You have the right to file a complaint.
- You have a right to see OSHA citations issued to your employer.
- Your employer must correct workplace hazards.
- You have the right to copies of your medical records.

Employers:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the *OSH Act*.

Workers' Right to Refuse Dangerous Work

If you believe working conditions are unsafe or unhealthful, we recommend that you bring the conditions to your employer's attention, if possible.

You may file a complaint with OSHA concerning a hazardous working condition at any time. However, you should not leave the worksite merely because you have filed a complaint. If the condition clearly presents a risk of death or serious physical harm, there is not sufficient time for OSHA to inspect, and, where possible, you have brought the condition to the attention of your employer, you may have a legal right to refuse to work in a situation in which you would be exposed to the hazard. (OSHA cannot enforce union contracts that give employees the right to refuse to work.)

Your right to refuse to do a task is protected if **all** of the following conditions are met:

- Where possible, you have asked the employer to eliminate the danger, and the employer failed to do so; and
- You refused to work in "good faith." This means that you must genuinely believe that an imminent danger exists; and
- A reasonable person would agree that there is a real danger of death or serious injury; and
- There isn't enough time, due to the urgency of the hazard, to get it corrected through regular enforcement channels, such as requesting an OSHA inspection.

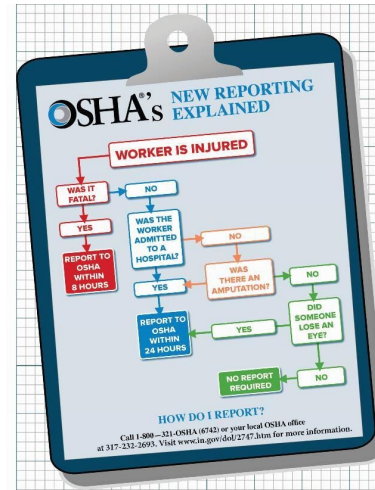
You should take the following steps:

- Ask your employer to correct the hazard, or to assign other work;
- Tell your employer that you won't perform the work unless and until the hazard is corrected; and
- Remain at the worksite until ordered to leave by your employer. NOTE: As a point of clarification, you should NOT remain in a hazardous area.

If your employer retaliates against you for refusing to perform the dangerous work, contact OSHA immediately. Complaints of retaliation must be made to OSHA within 30 days of the alleged reprisal. To contact OSHA call 1-800-321-OSHA (6742) and ask to be connected to your closest area office. No form is required to file a discrimination complaint, but you must call OSHA.

Reporting of Fatalities and Catastrophes

OSHA Standard, 29 CFR Subpart 1904.39, Reporting Fatality, Injury and Illness Information to the Government requires that employers report all work related fatalities within eight (8) hours and all work-related inpatient hospitalizations, all amputations and all losses of an eye within 24 hours. Employers must orally report the fatality/hospitalization by telephone or in person to the OSHA Area Office or to the State Plan Office that is nearest to the site of the incident. Employers may also use the OSHA toll-free central telephone number, 1-800-321-OSHA (1-800-321-6742). These reports must also be reflected on the 300 log and other data keeping requirements per 1904.42, and per 1910.217(g) for Mechanical Power Press amputations.



What are Employers' Responsibilities to provide Fall Protection?

Initially, employers must assess the workplace to determine if walking or working surfaces have the necessary strength and structural integrity to safely support the workers. Once it is determined that the work surfaces will safely support the work activity, the employer must determine whether fall protection is required and, if so, select and provide workers with fall protection systems that comply with OSHA regulations. There are different action levels that require fall protection in different industries:

Industry	Fall Protection Action Level
General Industry	4 feet
Shipyards	5 feet
Construction Industry	6 feet
Longshoring	8 feet

When must employers provide Fall Protection in the Construction Industry?

The 6-foot rule applies to construction jobsites. Subpart M requires the use of fall protection when construction workers are working at heights of 6 feet or greater above a lower level. It applies at heights of less than 6 feet when working near dangerous equipment, for example, working over machinery with open drive belts, pulleys or gears or open vats of degreasing agents or acid.

Your Rights as a Whistleblower

You may file a complaint with OSHA if your employer retaliates against you by taking unfavorable personnel action because you engaged in protected activity relating to workplace safety and health, commercial motor carrier safety, pipeline safety, air carrier safety, nuclear safety, the environment, asbestos in schools,

corporate fraud, SEC rules or regulations, railroad carrier safety or security, or public transportation agency safety or security.

Whistleblower Laws Enforced by OSHA

Each law requires that complaints be filed within a certain number of days after the alleged retaliation.

You may file complaints by telephone or in writing under the:

- Occupational Safety and Health Act (30 days)
- Surface Transportation Assistance Act (180 days)
- Asbestos Hazard Emergency Response Act (90 days)
- International Safe Container Act (60 days)
- Federal Rail Safety Act (180 days)
- National Transit Systems Security Act (180 days)

Under the following laws, complaints must be filed in writing:

- Clean Air Act (30 days)
- Comprehensive Environmental Response, Compensation and Liability Act (30 days)
- Energy Reorganization Act (180 days)
- Federal Water Pollution Control Act (30 days)
- Pipeline Safety Improvement Act (180 days)
- Safe Drinking Water Act (30 days)
- Sarbanes-Oxley Act (90 days)
- Solid Waste Disposal Act (30 days)
- Toxic Substances Control Act (30 days)
- Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (90 days)

Unfavorable Personnel Actions

Your employer may be found to have retaliated against you if your protected activity was a contributing or motivating factor in its decision to take unfavorable personnel action against you. Such actions may include:

- Firing or laying off
- Blacklisting
- Demoting
- Denying overtime or promotion
- Disciplining
- Denying benefits
- Failing to hire or rehire
- Intimidation
- Reassignment affecting promotion prospects
- Reducing pay or hours

Filing a Complaint

If you believe that your employer retaliated against you because you exercised your legal rights as an employee, contact your local OSHA office as soon as possible, because you must file your complaint within the legal time limits. OSHA conducts an in- depth interview with each complainant to determine whether to conduct an investigation.

For more information, call your closest OSHA Regional Office. Addresses, fax numbers and other contact information for these offices can be found on OSHA's website, www.osha.gov, and in local directories. Some complaints must be filed in writing and some may be filed verbally (call your local OSHA office for

assistance). Written complaints may be filed by mail (recommend certified mail), fax, or hand-delivered during business hours. The date postmarked, faxed or hand delivered is considered the date filed.

If retaliation for protected activity relating to occupational safety and health issues takes place in a state that operates an OSHA-approved state plan, the complaint should be filed with the state agency, although persons in those states may file with Federal OSHA at the same time. Although the Occupational Safety and Health Act covers only private sector employees, state plans also cover state and local government employees

How OSHA Determines Whether Retaliation Took Place

The investigation must reveal that:

- The employee engaged in protected activity;
- The employer knew about the protected activity;
- The employer took an adverse action; and
- The protected activity was the motivating factor (or under some laws, a contributing factor) in the decision to take the adverse action against the employee.

If the evidence supports the employee's allegation and a settlement cannot be reached, OSHA will issue an order requiring the employer to reinstate the employee, pay back wages, restore benefits, and other possible remedies to make the employee whole.

Limited Protections for Employees Who Refuse to Work: You have a limited right under the OSH Act to refuse to do a job because conditions are hazardous. You may do so under the OSH Act only when

- you believe that you face death or serious injury (and the situation is so clearly hazardous that any reasonable person would believe the same thing);
- you have tried to get your employer to correct the condition, and there is no other way to do the job safely; and
- the situation is so urgent that you do not have time to eliminate the hazard through regulatory channels such as calling OSHA.

Defining the Qualified Person and the Competent Person

There are two persons identified by OSHA who have specific responsibilities related to fall protection. They are (1) the qualified person and (2) the competent person.

Qualified Person

Qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, can successfully demonstrate the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Per ANSI (American National Safety Institute)/ASSP (American Society of Safety Professionals) Z359 Fall Protection Code definition of a Qualified Person is as follows:

- A person with recognized degree or professional certificate; and
- with extensive knowledge, training, and experience in the fall protection and rescue field;
- who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems.



Within OSHA's fall protection standards, a "Qualified Person" may be required to ensure the proper design, installation and use of fall protection systems and plans. One of the more important aspects of a fall protection system is the *anchorage* point for personal fall arrest systems (PFAS's).

Anchorage means a secure point of attachment for lifelines, lanyards or deceleration devices. Properly planned anchorages should be used if they are available. In some cases, anchorages must be installed immediately prior to use. In such cases, a registered professional engineer with experience in designing fall protection systems, or another **qualified person** with appropriate education and experience should design an anchor point to be installed.

In other cases, there will be a need to devise an anchor point from existing structures. Examples of what might be appropriate anchor points are steel members or I-beams if an acceptable strap is available for the connection; large eye-bolts made of an appropriate grade steel; guardrails or railings if they have been designed for use as an anchor point; or masonry or wood members only if the attachment point is substantial and precautions have been taken to assure that bolts or other connectors will not pull through. A **qualified person** should be used to evaluate the suitability of these "make shift" anchorages with a focus on proper strength.

Competent Person

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Per ANSI/ASSE Z359.0 definition of a Competent Person is as follows:

- An individual chosen by the employer to be responsible for the immediate supervision, application, and observing of the employer's managed fall protection program;
- who through training and knowledge, is capable of identifying, evaluating and addressing existing and potential fall hazards, and
- who has the employer's authority to take prompt corrective action with regard to such hazards.



Within OSHA's fall protection standards, a **competent person** is required to perform frequent and regular inspections of the job-site materials and equipment.

- This person is designated by the employer and must have the authorization to take prompt corrective measures to eliminate hazards and enforce safety rules.
- A competent person must also train each employee on how to recognize fall hazards and the procedures to be followed in order to minimize these hazards.
- Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a **competent person** to be undamaged and suitable for reuse.
- A personal fall arrest system is designed, tested, and supplied as a complete system. However, it is common practice for lanyards, connectors, lifelines, deceleration devices, and body harnesses to be interchanged since some components wear out before others. The employer and employee should realize that not all components are interchangeable.

- Any substitution or change to a personal fall arrest system should be fully evaluated or tested by a **competent person** to determine that it meets the standard, before the modified system is put in use.

Qualifications of the Competent Person

A **competent person** must qualified in the following areas:

- The nature of fall hazards in the work area.
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.
- The role of employees in fall protection plans.
- OSHA fall protection standards.
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used.
- The role of each employee in the safety monitoring system when this system is used.
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.

The employer shall assure that each employee has been trained by a **competent person** and must maintain a written certification record verifying the training.

"Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.

Occupational Safety and Health Act

The Occupational Safety and Health Act of 1970 states its mission as the following:

“To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health...”

What is OSHA’s General Duty Clause?

Section 5(a)(1) of the OSH Act has become known as “The General Duty Clause”. It is a catch all for citations if OSHA identifies unsafe conditions to which a regulation does not exist.

In practice, OSHA, court precedent, and the review commission have established that if the following elements are present, a “general duty clause” citation may be issued.

1. An employer failed to keep the workplace free of a hazard to which employees of that employer were exposed.
2. The hazard was recognized. (Examples: Equipment Manufacturer Manuals, other Industry and Council associated manuals, through job-site safety personnel, employees, trade unions and other associations/organizations like ANSI.)
3. The hazard was causing or was likely to cause death or serious physical harm.
4. There was a feasible and useful method to correct the hazard.

29 CFR 1926.501 Safety and Health Regulations for Construction

The employer shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.

What 29 CFR 1926 Subpart M – Fall Protection for Construction Covers

Subpart M lays out the requirements and criteria for fall protection in construction workplaces. For example, it applies when workers are working at heights of 6 feet or more above a lower level. It also covers protection from falling objects, falls from tripping over or falling through holes, and protection when walking and working around dangerous equipment without regard to height.

Subpart M provisions do not apply, however, to workers inspecting, investigating, or assessing workplace conditions prior to the actual start of work or after all construction work has been completed.

What construction areas and activities does 29 CFR 1926 Subpart M cover?

The standard identifies certain areas and activities where fall protection or falling object protection may be needed. For example, it might require fall protection for a worker who is: on a ramp, runway, or another walkway; at the edge of an excavation; in a hoist area; on a steep roof; on, at, above, or near wall openings; on a walking or working surface with holes (including skylights) or unprotected sides or edges; above dangerous equipment; above a lower level where leading edges are under construction; on the face of formwork and reinforcing steel; or otherwise on a walking or working surface 6 feet or more above a lower level.

The standard may also require fall protection where a worker is:

- Constructing a leading edge
- Performing overhand bricklaying and related work
- Engaged in roofing work on low-slope roofs, precast concrete

Specific construction industry fall protection requirements for Scaffolds are contained in Subpart L, for Steel Erection in Subpart R, and for Stairways & Ladders in Subpart X. In general industry (29 CFR Part 1910) requirements for Walking-Working Surfaces may also apply.

29 CFR 1910 Subpart D Walking-Working Surfaces in General Industry

OSHA updated its general industry Walking-Working Surfaces and Personal Protective Equipment (Fall Protection Systems) standards (29 CFR part 1910, subparts D and I) to increase the protection of general industry employees and employers from hazards associated with walking-working surfaces. These rules were promulgated to significantly reduce the number of worker deaths and injuries that occur each year resulting from workplace slip, trip, and fall hazards. The final rule was published on November 18, 2016, and became effective on January 17, 2017. The rule applies to all general industry workplaces and covers all walking-working surfaces, which include horizontal and vertical surfaces such as floors, stairs, roofs, ladders, ramps, scaffolds, elevated walkways, and use of fall protection systems. The final rule covers a wide variety of general industry firms including building management services, utilities, warehousing, retail, window cleaning, chimney sweeping, and outdoor advertising. The rule:

- Eliminates the hazard of workers climbing extended heights on fixed ladders without fall protection by phasing out the use of qualified climbers in outdoor advertising;
- Phases in a requirement that fixed ladders (over 24 feet) must be equipped with ladder safety or personal fall protection systems to prevent workers from falling or arresting their fall before contact with a lower level;

- Provides performance criteria for personal fall protection equipment in general industry, similar to the criteria used in OSHA's construction industry rules since 1994;
- Requires the use of body harnesses, and prohibits body belts, in personal fall arrest systems to distribute fall arrest forces over a larger area of a worker's body; and
- Requires that workers who use personal fall protection and other covered equipment be trained, and retrained as necessary, in fall and equipment hazards prior to work at elevated heights and use of that equipment, including fall protection systems.

A number of revisions were made to the existing general industry standards with the publication of this rule. Major changes and new requirements include:

- **Fall protection flexibility (§1910.28(b)).** Employers can choose from a range of accepted fall protection systems (including personal fall protection systems) due to the elimination of the prior mandate to use guardrails as the primary method. Employers may use non-conventional fall protection practices in certain situations (such as designated areas on low-slope roofs for work that is temporary and infrequent and fall protection plans on residential roofs when employers can demonstrate guardrail, safety net, or personal fall protection systems are not feasible or create a greater hazard);
- **Updated scaffold requirements (§1910.27(a)).** General industry employers must now comply with OSHA's construction scaffold standards;
- **Phase-in of ladder safety systems or personal fall arrest systems on fixed ladders (§1910.28(b)(9)).** The final rule phases in - over a 20-year period - a requirement to equip fixed ladders (that extend over 24 feet) with ladder safety or personal fall arrest systems, and prohibits the use of cages and wells as a means of fall protection after the phase-in deadline. The final rule grandfathers in cages and wells on existing ladders, but requires that employers equip new ladders and replacement ladders/ladder sections with ladder safety or personal fall arrest systems during the phase-in period;
- **Phase-out of the “qualified climber” exception in outdoor advertising (§1910.28(b)(10)).** The final rule phases out OSHA's directive allowing qualified climbers in outdoor advertising to climb fixed ladders on billboards without fall protection and phases in the requirement to equip fixed ladders (over 24 feet) with ladder safety or personal fall arrest systems. Outdoor advertising employers must follow the fall protection phase-in timeline for fixed ladders. However, if ladders do not have any fall protection, outdoor advertising employers have two years to comply with the existing standard (i.e., install a cage or well) or, instead, may install a ladder safety or personal fall arrest system, both of which are less costly than cages or wells;
- **Rope descent systems (RDS) and certification of anchorages (§1910.27(b)).** The final rule prohibits employers from using RDS at heights greater than 300 feet above grade unless they demonstrate it is not feasible or creates a greater hazard to use any other system above that height. In addition, the final rule requires building owners to provide, and employers to obtain, information that permanent anchorages used with RDS have been inspected, tested, certified, and maintained as capable of supporting at least 5,000 pounds per employee attached.
- **Personal fall protection system performance and use requirements (§1910.140).** The final rule, which allows employers to use personal fall protection systems (i.e., personal fall arrest, travel restraint, and positioning systems), adds requirements on the performance, inspection, use, and maintenance of these systems. Like OSHA's construction standards, the final rule prohibits the use of body belts as part of a personal fall arrest system;

- **Inspection of walking-working surfaces (§1910.22(d)).** The final rule requires that employers inspect walking-working surfaces regularly as needed and correct, repair, or guard against hazardous conditions; and
- **Training (§1910.30).** The final rule adds requirements that employers ensure workers who use personal fall protection and work in other specified high hazard situations are trained, and retrained as necessary, regarding fall and equipment hazards and fall protection systems. Employers must provide information and training to each worker in a manner the worker understands.

Information Resources

You can access the most recent copy of OSHA regulations and view many other OSHA resources at the [OSHA website \(www.osha.gov\)](http://www.osha.gov). Recent regulatory changes can also be accessed in the [Electronic Code of Federal Regulations \(www.ecfr.gov\)](http://www.ecfr.gov).

Module 1 Key Take-aways

- Falls are the leading cause of death in construction. One of every three construction fatalities are as a result of falls.
- OSHA requires that fall protection be provided at elevations of
 - four feet in general industry workplaces;
 - five feet in shipyards;
 - six feet in the construction industry and;
 - eight feet in longshoring operations.
- Regardless of height, if a worker can fall into or onto dangerous machines or equipment (such as a vat of acid or a conveyor belt) employers must provide guardrails and toe-boards to prevent workers from falling and getting injured.
- Employers must report all work related fatalities within eight (8) hours and all work-related inpatient hospitalizations, all amputations and all losses of an eye within 24 hours.
- **Qualified person** means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, can successfully demonstrate the ability to solve/resolve problems relating to the subject matter, the work, or the project.
- **Competent person** means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- The employer shall assure that each employee has been trained, and maintain a written certification record verifying compliance as necessary, by a **competent person**.
- 29 CFR 1926 Subpart M Fall Protection lays out the requirements and criteria for fall protection in **construction** workplaces.
- 29 CRR 1910 Subpart D Walking-Working Surfaces includes requirements for fall protection in **general industry**.