

Fall Hazards

Introduction

Fall hazards exist at most construction worksites exposing workers to dangerous work environments on a daily basis. A fall hazard is anything that may cause a person to lose his or her balance or bodily support resulting in a fall. Any walking or working surface is a potential fall hazard.

OSHA Fall Protection Guidelines

Construction workers work on a variety of elevated work surfaces with unique fall hazards. Anyone working at a height of four feet or more is at risk for a fall.

Therefore, OSHA:

- Issues regulations to employers to ensure the safety of workers
- Requires employers to provide fall protection for individuals working at a height of six feet or greater, or above dangerous equipment or machinery.

These regulations provide specific guidelines for:

- Guarding fall hazards.
- Using ladders safely.
- Constructing stairs properly.
- Assembling and using scaffolds safely.

OSHA Fall Protection Regulations

-Due to OSHA's rules, employers in the construction industry must:

- Provide working conditions that are free of known dangers.
- Keep floors in work areas in a clean and sanitary 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.

Fall Protection Methods

Because of the dangers in working on elevated surfaces, it is important that construction workers use the right equipment and information to StartSafe and StaySafe and prevent falls on work sites.

The primary methods available to protect workers from fall hazards are:

- Fall protection equipment
- Safe ladder usage
- Training

Fall Protection Methods

Take a few moments to review the definitions and make sure you understand them.

Term	Definition
Guardrail	Considered a fall <i>prevention</i> system because it stops a person from falling in the first place.
Safety Net System	Designed to catch a person and break his or her fall. Must be placed directly below the working surface, if possible, but never more than 30 feet below.
Personal Fall Arrest System	Consists of an anchor, connectors, and a full-body harness that work together to break a fall.

Preventing Falls with Guardrails

When there are holes or openings in a floor or wall, OSHA regulates how employers must protect these potential fall hazards using various types of guards or barriers intended to prevent falls. The most common fall prevention system is a guardrail which is a barrier along the open sides of stairways and platforms that prevent falling.

Preventing Falls with Guardrails

The OSHA's guardrail requirements are as follows:

- Openings cannot exceed 19 inches
- Must be smooth enough to protect workers from cuts and avoid snagging their clothes
- Screens and mesh must extend from the top rail to the working level
- Guardrails close to holes at points of access, like a ladder way, require a gate to prevent someone from falling through the hole, or be offset preventing someone from walking into the hole
- Wire rope guardrails must be flagged with highly visible materials at least every six feet

Safety Net Guidelines

Safety net systems consist of mesh nets and connecting components. When an employer uses safety nets on a construction site, he or she must:

- Install the net as close as possible below the working surface.
- Place the net no more than 30 feet below the working surface.
- Confirm that the net can absorb the force of a falling 400-pound bag of sand.
- Verify the net has a border rope with a minimum strength of 5,000 lbs.
- Inspect the net every week for damage and after any event that could damage them.
- Remove any potentially dangerous items immediately.
- Use OSHA's formula to determine if the net sufficiently covers the working surface.

Personal Fall Arrest Systems

Fall arrest is a form of fall protection that involves the safe stopping of a person already falling.

There are two types of fall arrest:

- General fall arrest system, such as safety nets
- Personal fall protection system, such as lifelines

Personal Fall Arrest Systems

The most common type of fall arrest in construction is the personal fall arrest system (PFAS) also called a lifeline. Per OSHA's standards, workers must wear a full-body harness, one part of a PFAS, when working:

- on a suspended scaffold 10 feet or higher above the working surface, or
- in a bucket truck or aerial lift.

Employers may choose to use a PFAS, instead of a guardrail, when workers are on a supported scaffold more than 10 feet above the working surface.

Personal Fall Arrest Systems

A PFAS consists of an anchor, full body harness, and connector. Many PFAS also include a deceleration device which is a subsystem that dissipates the forces associated with a fall arrest event. They are an integral tool in helping you StartSafe and StaySafe.

A simple way to remember the primary parts of a PFAS is by the acronym ABC which stands for

- Anchor
- Body harness
- Connector

Personal Fall Arrest Systems Guidelines

When working with PFAS be sure to:

- Inspect your PFAS for damage each time before you wear it. If there are defects, or if someone fell using the equipment, do not use it and remove this PFAS from service.
- Make sure that vertical lifelines or lanyards have a minimum breaking strength of 5,000 lbs. and cannot be cut or abraded.
- Attach each worker to his or her own vertical lifeline.
- Verify that the webbing used for ropes, lifeline straps, lanyards, and harnesses are made of synthetic fibers.

Putting on a Personal Fall Arrest System

The key to ensuring a personal fall arrest system protects a worker from a fall is ensuring he or she puts the PFAS on properly. So, let's review the correct way to wear a PFAS.

Step	PFAS Instructions
1	Hold on to the top shoulder straps or the D-ring on the back and check to ensure that no section of the harness is twisted or tangled.
2	Grasp the shoulder straps and slip into the harness as if you were putting on a jacket. Check to ensure that each shoulder strap lays flat against the body, and that there are no twists in the material.
3	Buckle the chest strap by connecting the male buckle to the female buckle. When it is secure, adjust the chest strap until it rests comfortably across the chest.
4	If the harness has a belt attachment, buckle and adjust the belt. Inspect the harness to ensure that the belt passed through all the existing belt loops.
5	Reach behind your left leg and grasp the leg strap. Bring the strap between the legs and buckle securely. Repeat this process with the right leg.
6	After you buckle both leg straps, double-check all straps to ensure they fit properly. The chest strap should rest approximately six (6) inches below the top of the shoulder, and the D-ring on the back of the harness should rest between the shoulder blades.

Preventing Falls from Ladders

Ladders are one of the most common pieces of equipment on a construction site. But that does not mean they are safe. Construction workers are injured or killed falling from a height every day. Using ladders more safely is one way to reduce the number of falls at your worksite and StartSafe and StaySafe.

Keys to preventing a fall from a ladder include:

- Choosing the right ladder for the job.
- Tying the top and bottom of the ladder to fixed points when necessary.
- Keeping your hands free of carrying tools or other materials when climbing a ladder.