

Lesson: Fall Protection Part II

Lesson Objectives:

- Explain hierarchy of control and identify fall protection system options
- Describe components of personal fall arrest systems and how to inspect, wear, and care for the systems
- Describe components of a guardrail system and the types of guardrails
- Distinguish when and how to use positioning device systems, warning line systems, and covers
- Determine when and how to use safety monitoring systems, controlled access zone, and safety nets
- State the fall protection plan requirements, including falling object protection plans
- State fall protection training requirements, topics, and requirements for a certification. Identify situations where you need to provide fall protection training.

Topics

- Overview
- Personal Fall Arrest Systems
- Guardrail Systems
- Positioning Device Systems, Warning Lines Systems, and Covers
- Safety Monitoring Systems, CAZ, and Safety Nets
- Fall Protection Plans
- Fall Protection Training Program

Topic: Overview

Employers are required to provide fall protection for employees when they are exposed to a fall of six feet or more to a walking or working surface. Employers also are required to provide and install fall protection systems before an employee begins any work that requires fall protection.

In this lesson you learned about hierarchy of control and types of fall protection options available for protecting you from fall hazards. Having completed this topic, you should be able to:

- Explain hierarchy of control
- List types of fall protection options available for protecting employees from fall hazards
- Identify most frequently cited serious violations in fall protection standards

Topic summary:

Please take a moment to review these major points before you continue with the next topic.

- To reduce the risks associated with fall hazards, engineering controls, administrative controls, and PPE should be considered and used.
- The types of fall protection options available for protecting employees from fall hazards include:
 - Personal fall arrest systems
 - Guardrails
 - Positioning device systems
 - Warning lines
 - Covers
 - Safety monitoring systems
 - Controlled access zones
 - Safety nets

Topic: Personal Fall Arrest Systems

In this topic you learned about personal fall arrest systems (PFAS). Having completed this topic, you should be able to:

- State that a PFAS consists of an anchorage point, connector, lanyards, and a body harness and describe its criteria
- Explain other components of PFAS such as lifelines, D-rings, snaphooks, and body belts
- List specific requirements for PFAS when a combined person and tool weight is 310 pounds
- List PFAS user training programs suitable for particular situations
- State PFAS inspection requirements
- Explain how to care for a PFAS
- Demonstrate how to wear a PFAS
- Explain requirements for planning the PFAS

Topic summary:

Please take a moment to review these key points before you continue with the next topic.

- A PFAS consists of an anchorage point, a connector, and a body harness and may also consist of a deceleration device, lifeline, or suitable combinations.
- The components of a PFAS have many functions to be used for fall arrest system, positioning, and fall restraint system.
- If an employee with a combined person and tool weight of 310 pounds or more is using the PFAS, the employer must modify the PFAS to meet the criteria set by OSHA for protection for the heavier weight.
- A PFAS that has been subject to an impact load must be immediately removed from service and not used for employee protection until inspected and determined by a competent person to be undamaged and suitable to reuse.
- Proper storage and maintenance of a PFAS after use is as important as cleaning the equipment of dirt, corrosives, or contaminants. The storage area should be clean, dry, and free of exposure to fumes or corrosive elements.
- The location of the anchorage point also should consider the hazard of obstructions in the potential fall path of the employee.
- When mixing components, the employer and employee should realize that not all components are interchangeable.

Topic: Guardrail Systems

In this topic you learned about guardrail systems. A guardrail system is one of the most common forms of fall protection in the construction industry. Having completed this topic, you should be able to:

- Describe proper use of a guardrail system including toprail, midrail, and toeboard
- State criteria required for guardrail systems
- Explain special guardrail provisions
- List different types of guardrails and describe their requirements

Topic summary:

Please take a moment to review these points before you continue with the next topic:

- A guardrail system is composed of a toprail, midrail, and posts. Where there is potential for falling objects, a toeboard also is required as part of the guardrail system.
- Guardrails should be strong enough to withstand a force of up to 200 pounds applied in any outward or downward direction.
- When a guardrail system is used at a hoisting area, a chain, gate, or removable guardrail section must be placed across the hoist access opening when hoisting operations are not taking place.
- Four different types of guardrails based on the material used are wood guardrails, pipe guardrails, structural steel guardrails, and wire rope guardrails.

Topic: Positioning Device Systems, Warning Lines Systems, and Covers

In this topic you learned about warning lines systems, positioning device systems, and covers. A warning line system is a barrier that is erected to warn employees that they are approaching an unprotected roof side or edge. A positioning device system allows you to be supported on an elevated vertical surface. Employees must be protected from falling into or through holes by hole covers.

Having completed this topic, you should be able to:

- State the requirements for warning lines systems
- Describe requirements for positioning device systems
- List criteria required for covers for holes in floors, roofs, and other walking/working surfaces

Topic summary:

Please take a moment to review these points before you continue with the next topic:

- A warning line system is a barrier erected to warn employees that they are approaching an unprotected roof side or edge. It designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.
- A positioning device system is a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.
- Employees must be protected from falling into or through holes by placing hole covers.
- Covers should support at least twice the weight of the employee, equipment, materials, and the maximum axle load of the largest vehicle to which the cover might be subjected.

Topic: Safety Monitoring Systems, CAZ, and Safety Nets

In this topic, you learned about safety monitoring systems, controlled access zone, and safety nets. A safety monitoring system is a passive safety system where the competent person is responsible for recognizing and warning employees of fall hazards. A controlled access zone (CAZ) is an area in which certain work may take place without use of guardrail systems, personal fall arrest systems, or safety nets. Safety nets are another conventional fall protection system that employers may use to protect employees from falls.

Having completed this topic, you should be able to:

- Explain how safety monitoring systems can protect you from falling
- Describe requirements for the control lines and controlled access zone, including areas where overhead bricklaying operations are taking place
- State the requirements for controlled access zone
- State the requirements for safety nets
- Explain how to test safety nets

Topic summary:

Please take a moment to review these key points before you continue with the next topic:

- The safety monitor works on the same level as the employees who have to be protected and provides oral warnings to those employees whenever they are approaching the area of a hazard. Workers are not protected by other fall protection system when using the safety monitor.
- A controlled access zone (CAZ) is an area in which certain work may take place without use of guardrail systems, personal fall arrest systems, or safety net systems.
- The controlled access zone is defined by a control line erected between 6 feet and 25 feet from the unprotected or leading edge. When erecting precast concrete members, control lines can be erected not less than 6 feet or more than 60 feet or half the length of the member being erected whichever is less from the leading edge.
- Safety nets must be installed as close as possible under the walking/working surface on which employees are working and never more than 30 feet below this level.
- Safety net testing is required in the following situations:
 - After initial installation
 - Before initial use as fall protection
 - Whenever relocated
 - After a major repair
 - At six-month intervals if left in one place

Topic: Fall Protection Plans

In this topic you learned about fall protection plans. Having completed this topic, you should be able to:

- Describe fall protection plan requirements
- State the criteria for situations in which fall protection must be considered to protect workers from overhead hazards

Topic summary:

Please take a moment to review these points before you continue with the next topic:

- The fall protection plan should be prepared, developed, and approved by a qualified person.
- Implementation of the fall protection plan is under the supervision of a competent person.
- Fall protection plans must document the reasons why use of conventional fall protection systems are infeasible or why their use would create a greater hazard.
- Where no other alternative measure has been implemented, the employer must implement a safety monitoring system.
- A hardhat must be worn and a guardrail system including a toeboard can be used as protection against falling objects.
- Barricade the area to which objects could fall and prohibit employees from entering the barricaded area.

Topic: Fall Protection Training Program

In this topic you learned about training program specifications required for fall protection. Having completed this topic, you should be able to:

- Describe training requirements and training topics
- State what should be included in a certification of training
- Identify when to take a fall protection training

Topic summary:

Please take a moment to review these points before you continue with the next topic:

- The employer has to provide a training program for each employee who might be exposed to fall hazards.
- The training program must train each employee on procedures that will help minimize fall hazards.
- Fall protection training requires a certification, which includes the employee's name, date of training, and signature of trainer.
- Training should take place when initial employment begins, with changes in the workplace or in the type of fall protection system used, and when previous training has been inadequate.