OSHA mandates that students spend a specific amount of time in each module of this course. In order to comply with OSHA’s requirement, additional resources related to this module’s content are provided below. You should also consider reviewing the Fact Sheet for this module, which is located at the end of this resource list.

When the minimum required time for this module has elapsed, you will be allowed to proceed to the next module.

**CAUTION:** When closing resource links, take care to not close your course browser window, as that will stop the module timer.

### Module 11: Scaffolds

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Module 11: Scaffolds

In this module, we cover information that will enable workers to recognize hazards and best practices associated with scaffolds.

Module Objectives

Terminal Objective

Given current OSHA and industry information regarding construction worksite illnesses, injuries, and/or fatalities, the student will be able to recognize hazards and best practices associated with scaffolds.

Enabling Objectives

Specifically, the student will be able to:

1. Recognize the types of scaffolds commonly used on construction sites.
2. Identify the hazards to which persons working on scaffolds are exposed.
3. Select methods that can be eliminate or reduce scaffolding hazards.
4. Select examples of incorporating the three essential elements of safe scaffold construction.

What Types Of Scaffolds Are Commonly Used On Construction Sites?

A scaffold is any temporary elevated platform (supported or suspended) and supporting structure that is used on a jobsite for supporting employees or materials or both.

There are three basic types of scaffolds:

- Supported scaffold – this type of scaffold rests on the ground and is supported by rigid legs, poles, frames, or outriggers. Supported scaffolds are usually made of metal poles or systems or of wood.
- Suspended scaffold – this type of scaffold consists of platforms that are suspended from above by ropes or some other type of non-rigid support. Suspended scaffolds can have a single suspension point or a double suspension point.
- Aerial lifts – includes vehicle-mounted or self-propelled elevating work platforms that are used to elevate personnel. Aerial lifts may be made of metal, wood, fiberglass reinforced plastic, or other material and may be powered or manually operated.

What Hazards Are Associated With Scaffolds?

Approximately 65% of construction workers frequently work on scaffolds. Scaffold-related accidents account for approximately 4,500 injuries and 50 fatalities every year.

Working on and around scaffolds is dangerous as workers can be exposed to several hazards, including the following:

- Falls – slips, unsafe access, lack of fall protection, or failure of scaffold platforms or planks are factors that lead to fall incidents.
- Falling object(s) – materials, debris, or tools may fall from a scaffold at any time and hit workers below.
- Electrical hazards – work on scaffolds near power lines exposes workers to electric shock or electrocution.
- Collapse hazards – scaffolds can collapse if not secured, level, or stable or if they are overloaded.
- Planking hazards – planks that are in poor condition (cracked, dry-rot, or otherwise weakened) or planks that are not placed properly are hazardous due to potential for failure or for people/objects to fall through them.

What Methods Can Eliminate Or Reduce Scaffold Hazards?

Proper Access

Proper access to the scaffold must be provided when platforms are more than two feet above or below a point of access. Some permitted ways to access scaffolds are ladders, stair towers, ramps, and walkways. Do not access the work surface by climbing on crossbraces.
Personal Fall Arrest System
A personal fall arrest system, or PFAS, consists of an anchorage, connectors, and body harness, and may include a lanyard, deceleration device, lifeline, or combinations of these. The type of fall protection required depends on the kind of scaffold being used.

Inspect PFAS prior to each use.
Don’t use PFAS until it has been inspected by a competent person.
PFAS should not allow a free-fall of more than six feet, and there should be prompt rescue after a fall.

Guardrails
Guardrails must be installed on open sides and ends of scaffolds. If the work platform is more than 14 inches away from the work, a guardrail or PFAS must be used.

The toprails on supported scaffolds, manufactured or placed in service after January 1, 2000, must be between 38-45 inches above the platform surface. All suspended scaffolds and supported scaffolds, manufactured or placed in service before January 1, 2000, where both a guardrail and PFAS are used must be 36-35 inches.

Mid-rails shall be installed halfway between the toprail and the scaffold platform when used. When cross-bracing is used as a mid-rail, it must be between 20-30 inches above the platform.

Protection From Falling Objects
When there is the potential for tools, materials, or equipment to fall from a scaffold and strike workers below, protection must be provided. One of the following methods must be used to protect workers:

- Barricades – the area below the scaffold should be barricaded to keep workers from being exposed to the hazards of falling objects.
- Toeboards – must be at least 3 ½ inches high, securely fastened, and capable of withstanding a force of at least 50 pounds.
- Screens or paneling – use if tools, materials, or equipment piles are higher than the toeboard height. Screens should extend from top of toeboard or platform to top of guardrail.
- Canopy or mesh nets – install between falling object hazard and employees; canopies must be capable of withstanding the impact of falling objects.
- Large, heavy objects – when the tools, equipment, or materials are too large, heavy, or massive to be contained by one of the methods listed, they shall be placed must be placed away from the edge and secured so as to prevent their falling.

Wear a hardhat when working around or below scaffolds to provide additional protection from falling objects.

Protection From Electrical Hazards
According to OSHA, “Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed or energized power lines than as follows:

- Insulated lines – minimum distance based on voltage
  - Less than 300 volts – 3 feet
  - 300 volts to 50 kilovolts – 10 feet
  - More than 50 kilovolts – 10 feet plus 0.4 inches for each 1 kv over 50 kv.
- Uninsulated lines – minimum distance based on voltage
  - Less than 50 kv – 10 feet
  - More than 50 kv – 10 feet plus 0.4 inches for each 1 kv over 50 kv.”

Scaffolds can be closer to power lines than specified where necessary to perform work, but only after the utility company or electrical system operator is notified and they de-energize or relocate the line or install protective coverings to prevent contact with the lines.

Moving Scaffolds
Workers cannot be on a scaffold when it is being moved unless the ground surface is level, the height of the scaffold is not more than twice the width, and outriggers are installed on both sides of the scaffold for additional leverage. Workers cannot be on a part of the scaffold that is outside of the wheel base and a competent person has to be on site when the scaffold is being moved.

Competent Person
A competent person must oversee assembly and disassembly of scaffolds, inspection of scaffolds, and safe use of scaffolds. A competent person must also train all employees who erect, disassemble, move, operate, repair, maintain, or inspect scaffolds.
What Are Three Essential Elements Of Safe Scaffold Construction?

Three essential elements of safe scaffold construction are:

- Use appropriate scaffold construction methods.
  - Meet platform requirements
  - Component pieces must match
  - Erect on stable and level ground
  - Lock wheels and braces
  - Meet requirements for height of scaffold

- Provide proper scaffold access.

- Use a competent person.