

FALL HAZARDS:
One of Construction's Fatal Four
FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:

In an effort to reduce the high number of injuries and deaths that occur on construction sites, the Occupational Safety and Health Administration, OSHA, has identified the four most common causes of injuries and fatalities in construction. Known as the "Fatal Four" or the "Focus Four," these hazards include struck-by hazards, caught-between hazards, fall hazards and electrocution hazards. While fall hazards pose an increased risk of falling on the same level, most construction-related deaths result from falls from height. The three major sources of falls from height in the construction industry include roofs, unprotected edges, holes and openings, improper scaffold construction and the unsafe use of portable ladders. This program discusses safe work practices workers must follow to protect themselves from the fall hazards presented by these three sources.

Topics include common fall hazards, guardrail use, personal fall arrest systems, fall protection requirements for scaffolding and basic portable ladder safety precautions.

PROGRAM OBJECTIVES: After watching the program, the participant will be able to explain the following:

- What the common fall hazards found on a construction site are;
- How guardrails and personal fall arrest systems are used for fall protection;
- What the OSHA fall protection requirements for scaffolding are;
- What basic safe work practices to follow when using portable ladders.

INSTRUCTIONAL CONTENT:

BACKGROUND

- As a construction worker, you already know that the jobsite can be dangerous. In fact, over 5,000 construction workers are killed and over 150,000 are injured each year.
- In an effort to reduce the high number of construction-related incidents, the Occupational Safety and Health Administration, OSHA, has identified the four most common causes of injuries and fatalities in construction.
- Known as the "Fatal Four" or the "Focus Four," these hazards include struck-by hazards, caught-between hazards, fall hazards and electrocution hazards.

FALL HAZARDS: One of the Fatal Four

- OSHA classifies falls into two different categories: falls from height and falls on the same level.
- Construction workers have an increased risk of both types of fall hazards, but the one that results in more construction-related fatalities are falls from height.
- Federal OSHA generally requires that fall protection be provided for construction workers who are working from heights of six feet or more; however, different states may have their own requirements on when fall protection systems must be put into place.
- The three major sources of falls from height in the construction industry include roofs, unprotected edges, holes and openings, improper scaffold construction and the unsafe use of portable ladders.

ROOFS, UNPROTECTED EDGES, HOLES AND OPENINGS

- In general, all employees on a surface with an unprotected side or edge which is six feet or more above a lower level must be protected from falling by the use of fall protection such as guardrail systems, safety net systems or personal fall arrest systems.
- In some instances, a warning line or "flag line" may be used to prevent workers from approaching an edge.
- Never work near an unprotected edge without some type of fall protection in place.
- Another fall hazard found on construction jobsites are holes and openings in floors, walls or roofs.

- Many construction job sites will have holes in the floor at some point or another. If they are not adequately marked or protected, serious injuries and fatalities could occur.
- OSHA defines a “hole” as a gap or open space in a floor, roof or horizontal walking or working surface that is at least two inches in its least dimension.
- An “opening” is defined by OSHA as a gap or open space in a wall or similar surface that is at least 30 inches high and at least 18 inches wide, through which a worker can fall to a lower level.
- Covers are often used to prevent a worker from falling through a hole or opening. A cover must be sturdy enough to support at least double the maximum load that may be placed on it at any one time.
- The cover must also be properly secured to prevent accidental removal or displacement.

Fall Protection Measures

- In order to safeguard against unprotected edges and fall hazards, employers must assess their workplace to determine which fall protection measures will be implemented on their jobsite.
- The installation of a standard guardrail is often the preferred choice for fall protection. A standard guardrail consists of a top rail 42 inches high with a mid-rail at half that height and vertical uprights to support them.
- When guardrails are not installed, a personal fall arrest system is often used to protect workers from fall hazards.
- This system includes the use of a body harness, an anchor point and a connecting device.
- When using a personal fall arrest system, you must make sure it is connected to an approved anchor point sturdy enough to support a minimum of 5,000 pounds per person connected to it.
- Remember, your fall protection equipment won’t do you any good unless put it on and use it correctly.

SCAFFOLD CONSTRUCTION AND FALL PROTECTION

- OSHA requires that fall protection systems be provided for workers on scaffolding platforms of 10 feet or higher.
- Specifically, a guardrail or a personal fall arrest system must be used when working on a supported scaffold and both a guardrail and a personal fall arrest system must be used when working on a single-point or two-point suspended scaffold.
- According to OSHA, their most frequently cited scaffolding violations include lack of fall protection and unsafe access.
- If a guardrail system is utilized for fall protection, it must be installed on all open sides and ends of platforms.
- Material handling gate openings should remain closed and secured unless materials are being actively loaded or unloaded.
- Whenever a scaffold platform is more than two feet above or below the point of access, a suitable ladder, stair tower or other suitable structure is required for safe access.
- When climbing a scaffold ladder, maintain three points of contact when climbing and do not climb on the scaffold’s cross braces.
- A competent person must be available to supervise the construction, dismantling and alteration of all scaffolds. This helps to ensure that proper fall protection and a safe means of access are installed.

PORTABLE LADDERS

- Using a portable ladder is so common for many construction workers that complacency can easily become a safety concern. When workers become complacent, they tend to take shortcuts and ignore safe work practices. When this occurs on a ladder, the result is frequently a serious injury or death.
- Statistics show that there are over 100 workplace fatalities every year from ladders alone.
- Common factors that contribute to these deaths include ladders slipping out from under employees, improper ladder selection and falling off from overreaching.
- The two most basic types of ladder you’ll find on a construction site are extension ladders and step ladders.
- With extension ladders, make sure you have it positioned correctly so that it sits at a four to one angle.
- Do a quick check by keeping your feet at the base of the ladder and resting your hands on the rung in front of you.
- When trying to access an elevated surface, such as a roof or upper platform, the ladder should extend three feet or three rungs above the landing and be tied off or secured.
- Additionally, you should always use three points of contact when climbing a ladder. Three-point contact means two feet and one hand, or two hands and one foot, must be in contact with the ladder at all times while climbing.
- Always climb or descend while facing the ladder and make sure you aren’t climbing too high up. You should never stand on the top two steps of a step ladder or the top three rungs of a portable straight or extension ladder.

- Finally, make sure you're not overextending your reach when working from ladders. A good rule of thumb is to keep your belt buckle between the side rails.

A READING FROM THE OSHA FILES

Construction Worker Testimonial:

"A worker was climbing a 10-foot ladder to reach a level that was about nine feet above the adjacent floor. The ladder slipped and fell to the floor, and it killed him. Looking back on it, the ladder should have been tied off and it should have extended three feet above the level he was trying to reach. You've got to be so careful with ladders."

- It only takes a moment for complacency to lead to a ladder-related fatality. Never forget that even a short fall from a ladder can be fatal.

SUMMARY

- The fall hazards we have discussed, such as those presented by unprotected edges, holes, scaffolds and ladders, are part of OSHA's Fatal Four construction hazards that account for more than 60 percent of all construction-related injuries and fatalities.
- Don't become one of these statistics or stories. Stay alert on the job site and follow safe work practices to protect yourself from the fall hazards found on a construction job site.

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ANSWERS TO THE REVIEW QUIZ

1. c

2. b

3. c

4. b

5. b

6. a

7. c

8. a

9. b

10. a

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REVIEW QUIZ

Name _____ Date _____

The following questions are provided to determine how well you understand the information presented in this program.

1. Federal OSHA generally requires that fall protection be provided for construction workers who are working from heights of _____ or more.
 - a. 4 feet
 - b. 5 feet
 - c. 6 feet

2. OSHA defines a hole as a gap or open space in a floor, roof or horizontal walking or working surface that is at least 4 inches in its least dimension.
 - a. True
 - b. False

3. If a cover is placed over an opening to prevent a 200-pound worker from falling through a hole, it must be sturdy enough to support at least _____.
 - a. 200 pounds
 - b. 350 pounds
 - c. 400 pounds

4. An opening is defined by OSHA as a gap or open space in a wall or similar surface that is at least 30 inches high and at least _____ wide.
 - a. 12 inches
 - b. 18 inches
 - c. 24 inches

5. The top rail of a standard guard rail is _____ high.
 - a. 36 inches
 - b. 42 inches
 - c. 48 inches

6. An approved anchor point as part of a personal fall arrest system must be sturdy enough to support a minimum of 5,000 pounds per person connected to it.
 - a. True
 - b. False

7. OSHA requires that fall protection systems be provided for workers on scaffolding platforms of _____ or higher.
 - a. 6 feet
 - b. 8 feet
 - c. 10 feet

8. If a guardrail system is utilized for fall protection on scaffolding, it must be installed on all open sides and ends of platforms.
 - a. True
 - b. False

9. To position an extension ladder correctly, you should make sure that it sits at a _____ angle.
 - a. 3 to1
 - b. 4 to1
 - c. 5 to 1

10. You should never stand on the top _____ of a straight or extension ladder.
 - a. 3 rungs
 - b. 4 rungs
 - c. 5 rungs