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# MODULE 1—FALLS

**At the end of this module, you will be able to...**

- Cite facts relating to falls on the job.
- Define the important words that relate to falls.
- Recognize and use the OSHA regulations that relate to falls.
- Identify practices at your work that protect you from falls.
- Perform a worksite analysis to find hazards that could cause falls.
- Describe behaviors at your worksite that could cause falls.



## Activity: Can You Find The Fall-Related Hazards?

**Directions:** Look at the photo below as well as the slide your facilitator shows you. Can you find the hazards that relate to falls? Write them in the space below.



## Facts About Falls

### *Did You Know?*



- Falls from above are the leading cause of death among construction workers.
- Falls from above cause 1/3 of all deaths in construction.

- Falls from buildings create the most deaths.
- Next are falls from scaffolds.



- In all cases when an employee died from a fall, that person was not using fall protection, or was using it incorrectly.
- A person doesn't have to fall a long way to get hurt.

## Words You Need to Know

In this module, we will use some words that you should know. Let's review them now.

### *Scaffold*

A scaffold is a temporary structure on the outside of a building or structure. It is used by workers to build, clean or repair the structure. There are many kinds of scaffolds. Here is a description of the scaffolds you will use most in construction.

#### Rolling Scaffold

- This is a temporary scaffold that rolls to the worksite.

#### Suspended scaffold

- This scaffold is suspended from the structure that is under construction or repair.

#### Frame Scaffold

- This is a scaffold that is build around the structure that is under construction or repair.

#### Toeboard

- A toeboard is a barrier that is secured along the edge of a scaffold platform. Its purpose is to prevent the falling of tools and materials.

#### Competent Person

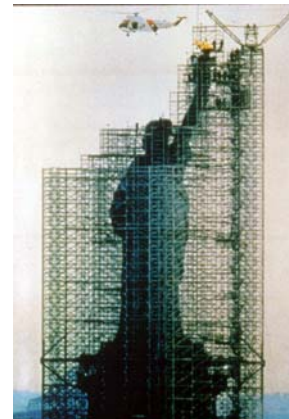
- The competent person for scaffolds identifies hazards relating to scaffolds and has the authority to take prompt action to correct and eliminate the hazards.
- A competent person must oversee the construction and use of scaffolds.



Rolling Scaffold



Suspended Scaffold



Frame Scaffold

**Note:** A complete description of the qualifications and duties of a competent person for scaffolds can be found on Page 4 of your Pocket Reference Guide.

## Words You Need to Know—continued

### *Ladders*

Ladders allow you to work in high places. It's important to use the right ladder for the job.



#### **Portable Ladder**

A ladder that leans against a structure. Can be a set length, or it can extend to a longer length.

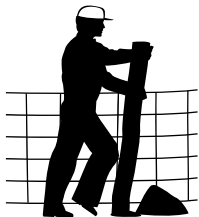
#### **Stepladder**

A short folding ladder with flat steps and a small platform.



### *Fall Protection*

Fall protection prevents you from falling. It also keeps you safe in the event that you do fall.



#### **Guard Railing**

Guard railing is a protective fencing around a high work surface. When you are working in high places, you need to be protected with guard railing. This is true whether you are on a roof, a platform or a scaffold.

#### **Fall Arrest Systems**

Fall arrest systems prevent employees from getting hurt if they do fall from a high place. A fall arrest system brings an employee to a safe stop before he or she hits the ground.



## OSHA and Fall Protection

There are many OSHA standards designed to protect you from falls. Let's review some of the most important. There are four major parts of OSHA 29 CFR 1926 that address fall protection. To read more about any of these regulations, see the OSHA website at [www.osha.gov](http://www.osha.gov). You can access the OSHA website using the hyperlink on your Tools and Resources CD-ROM.

### **OSHA 29 CFR 1926, Subpart E**

This subpart addresses personal protective and life saving equipment.

- 1926.104      Addresses the use of safety belts, lifelines and lanyards for employees working at height
- 1926.105      Addresses the use of safety nets for employees working at height

### **OSHA 29 CFR 1926, Subpart L**

This subpart addresses safety standards for scaffolds.

- 1926.450(b)    Defines a competent person for scaffolds.
- 1926.451      Addresses general requirements for scaffolds
- 1926.451(g)(1) Describes the type of fall protection that should be used for each type of scaffold

### **OSHA 29 CFR 1926, Subpart M**

This subpart addresses fall protection.

- 1926.501      Addresses an employer's duty to have fall protection
- 1926.501(b)(1) Discusses need for guardrail systems when employees work at height
- 1926.502      Provides criteria for fall protection systems
- 1926.502(c)    Provides criteria for safety net systems
- 1926.502(d)    Provides criteria for fall arrest systems

### **OSHA 29 CFR 1926, Subpart X**

This subpart addresses ladder safety.

- 1926.1053      Provides criteria for safe ladder use

## Activity: OSHA Quiz

**Directions:** Test how well you know the OSHA regulations. Following are five statements. Decide whether each statement is true or false, then check the appropriate box. Use the extra space to take notes during the quiz discussion.

- |    | TRUE                     | FALSE                    |   |
|----|--------------------------|--------------------------|---|
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | If a lifeline is used, it must be secured above the point of operation, and the anchorage it is secured to must be capable of supporting a dead weight of 5,000 pounds. |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | It is okay to use a front-end loader to support a scaffold as long as the brake on the front-end loader is firmly set.  |
| 3. | <input type="checkbox"/> | <input type="checkbox"/> | It is acceptable to access a scaffold by climbing on the scaffold's crossbraces.  |
| 4. | <input type="checkbox"/> | <input type="checkbox"/> | Guardrails do not have to be used if the platform a person is working on is large enough.   |
| 5. | <input type="checkbox"/> | <input type="checkbox"/> | If a ladder is not long enough to reach the point where work needs to be done, it is acceptable to fasten two ladders together to provide a longer ladder to reach.     |

## Activity: Best Practices and Injury Prevention Strategies

**Directions:** As important as it is to know the OSHA standards, it's even more important to know how to use the standards at your worksite. Identify some of the best safety practices that you use on the job in each of the following areas.

**Scaffolds**—List the safety practices you use on the job relating to scaffolds.



**Ladders**—List the safety practices you use on the job relating to ladders.

**Fall Protection**—List the safety practices you use on the job relating to fall protection.





## Checklist for the Worksite Analysis—Falls

Every day, when you begin work at your construction site, you should check for hazards that could cause a fall. Following is a list you can use when you do this check.

ITEM	OK?	CORRECTIVE ACTIONS
<b>General Work Area</b>		
• Are there unguarded floor holes?	_____	_____
• Will floor hole covers support two times the weight expected to be placed on them?	_____	_____
• Is there an unguarded vertical drop of six feet or more?	_____	_____
• Are employees wearing slip-resistant shoes?	_____	_____
<b>Guardrails</b>		
• Tall enough (top edge height between 39 and 45 inches)?	_____	_____
• Midrails, screens or mesh in use between guardrail and working surface?	_____	_____
• Screens and mesh cover everything from the top rail down to the working surface?	_____	_____
• Intermediate members between posts no more than 19 inches apart?	_____	_____
• Guardrail capable of withstanding at least 200 pounds of force from any direction?	_____	_____
• Midrails capable of withstanding 150 pounds of force from any direction?	_____	_____
• Guardrail free of rough edges or jagged surfaces?	_____	_____

## Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
<b>Ladders</b>		
<ul style="list-style-type: none"> <li>● Ladders in good condition with no broken parts?</li> </ul>	_____	_____
— Rungs?	_____	_____
— Steps?	_____	_____
— Side rails?	_____	_____
— Feet?	_____	_____
— Locking components?	_____	_____
● Portable ladder side rails extend at least three feet from top of landing?	_____	_____
● Side rails secured to at the top to a rigid support?	_____	_____
● Weight to be used on ladder within specifications?	_____	_____
● Portable ladders have a solid support such as a wall?	_____	_____
● Distance from foot of portable ladder to the base of the support structure at about ¼ of the length of the ladder?	_____	_____
● Ladder rungs or steps uniformly spaced at between 10 to 14 inches apart?	_____	_____
● Rungs shaped so that an employee's foot cannot slide off?	_____	_____
● Rungs skid resistant?	_____	_____
● Ladder free of oil, grease, wet paint, and other slipping hazards?	_____	_____
● Wood ladders free of opaque covering?	_____	_____

## Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
<b>Ladders—continued</b>		
<ul style="list-style-type: none"> <li>• Foldout or stepladders have a metal spreader or locking device to hold the front and back sections in an open position when in use?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Do you avoid using two or more ladders to reach a high work area offset with a landing or platform?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Do you avoid tying or fastening ladders together to provide longer sections?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Is area around top and bottom of the ladder kept clear?</li> </ul>	_____	_____
<b>Scaffolds</b>		
<ul style="list-style-type: none"> <li>• Is the scaffold constructed by a qualified person or organization?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Is the scaffold undamaged and in good condition?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Are there guardrails on the scaffold?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Can scaffold support its own weight plus four times the weight of the maximum load?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Is the scaffold platform fully planked with no open spaces?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Do you avoid having the scaffold platform extend excessively over its support?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>• Are scaffold footings level, rigid and capable of supporting the loading scaffold?</li> </ul>	_____	_____

## Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
<b>Scaffolds—continued</b>		
<ul style="list-style-type: none"> <li>● Is the scaffold supported only by stable objects?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Do you avoid using front-end loaders, fork lifts or other equipment as supports for the scaffold?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● On a suspension scaffold, are outside wires free of corrosion, scrubbing, flattening or preening?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● On a suspension scaffold, are wires free of damage caused by a torch or contact with electrical wires?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Is scaffold accessed by ladders or stairs, not by the crossbraces?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Are scaffold ladders and stairs slip resistant?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Is there adequate clearance between the scaffold and power lines?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Is the scaffold free of snow and ice?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Do you avoid makeshift devices, such as boxes or barrels, on a scaffold to extend working height?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Do you avoid using ladders on a scaffold?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Do employees wear hard hats when on and below the scaffolding?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Does the scaffold have toe boards to prevent tools and other loose equipment from falling?</li> </ul>	_____	_____
<ul style="list-style-type: none"> <li>● Does the scaffold have a canopy or net below it to catch falling objects?</li> </ul>	_____	_____

## Checklist for the Worksite Analysis—Falls

ITEM	OK?	CORRECTIVE ACTIONS
<b>Fall Arrest Systems</b>		
• Are personal fall arrest systems certified to perform correctly?	_____	_____
• Are personal fall arrest systems free of wear, damage and deterioration?	_____	_____
• Are safety nets installed as close as possible under the surface on which employees are working?	_____	_____
• Do safety nets have enough clearance to prevent contact with the surface structure underneath?	_____	_____
• Do you drop-test your safety net every time you install it, or is the net certified by a competent person every time you install it?	_____	_____
• Do you inspect your safety net for wear, damage and deterioration at least once a week?	_____	_____
• Do you avoid using defective nets?	_____	_____
• Do you remove objects and debris from nets frequently?	_____	_____

### OSHA Resources for this checklist are:

- 29 CFR 1926 Subpart E
- 29 CFR 1926 Subpart L
- 29 CFR 1926 Subpart M
- 29 CFR 1926 Subpart X

**Note:** To help you perform a worksite analysis when you are working at a job site, this checklist is reprinted on Pages 5-9 of your Pocket Reference Guide.

## Activity: Can You Find The Fall-Related Hazards?

**Directions:** Look at the slides your facilitator shows you. Can you find the hazards that relate to falls? Write them in the space below.

### Case #1



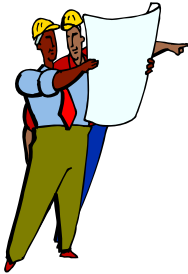
### Case #2



## Activity: Concerns at Your Worksite

**Directions:** Think about the sites where you usually work. Now answer the following questions as they relate to falls.

1. Describe some areas where it is tempting to take shortcuts or cut corners. How does this create *fall* hazards?



2. Describe behavior that you have seen that you think could cause a fall.



