



Materials Handling, Storage, Use, and Disposal

OSHA 10-Hour Construction Industry Course

Required Online Topic Time: 30m



Learning Objectives



Duration

30 minutes

Terminal Learning Objective

Given best practices and current OSHA and industry information regarding worksite illnesses, injuries, and/or fatalities, the student will be able to recognize how to protect themselves from hazards associated with material handling.

Enabling Learning Objectives

- Identify types of material handling equipment.
- Describe hazards associated with material handling activities (e.g., storage, use, and disposal).
- Identify methods to prevent hazards associated with material handling equipment.
- Recognize employer requirements to protect workers from material handling hazards.



Introduction



The efficient handling and storing of materials is vital to any industry.

These operations provide a continuous flow of raw materials, parts, and assemblies through the workplace, and ensure that materials are available when needed. But improper handling and storing of materials can cause costly injuries.



Hazards Associated with Materials Handling, Storage, Use, and Disposal



According to the Bureau of Labor Statistics, back injuries account for more than 20% of all occupational injuries each year.

A common hazard is exceeding load capabilities of equipment, floors, or storage shelves.

Other injuries include:

- *Sprains, strains, and tears*
- *Soreness and pain*
- *Bruises and contusions*
- *Cuts, lacerations, punctures, crushing, and amputations*



Hazards Associated with Materials Handling, Storage, Use, and Disposal

continued...



To avoid injuries and hazards, analyze your job's tasks and identify potential hazards associated with that task. Then, determine ways to control the conditions or actions in the workplace to minimize the danger.

Here are some examples of events that could lead to these injuries:

- Contact with objects and equipment
- Transportation incidents
- Exposure to harmful substances or environments
- Falls, slips, trips, or loss of balance
- Repetitive motion
- Overexertion



Hazards Associated with Materials Handling, Storage, Use, and Disposal

continued...



Knowledge Key

Though the hazards associated with materials handling in the workplace are varied, in most cases they are caused by using equipment or materials incorrectly, poor housekeeping and inadequate storage methods. Exceeding load capacity, manually moving heavy items, and struck-by and caught-on/-between accidents are also common sources of injury. The types of injuries you could receive in such cases are extensive. The best thing to do to keep safe on the job is to analyze your job's tasks and identify potential hazards associated with that task.

Preventing Materials handling, Storage, Use, and Disposal Hazards



Don't move things that are **too bulky or heavy** by yourself.

Practice safe lifting techniques and use aids, pads, handles, or wheels to move items, if possible. To practice safe lifting, you should:

- *Break loads into smaller more manageable parts*
- *Get help with heavy or bulky items*
- *Lift with your legs, keep the back straight, and do not twist*
- *Use handling aids, such as steps, trestles, shoulder pads, handles, and wheels*
- *Avoid lifting above shoulder level*

Preventing Materials handling, Storage, Use, and Disposal Hazards continued...



When manual handling of materials is required, you should seek help if:

- A load is too bulky to properly grasp or lift.
- You can't see around or over the load.
- You can't safely handle the load.

Remember, you can attach handles to loads to reduce the chance of crushing your fingers.

Manual handling of materials is the primary source of injury in the workplace, and four out of five of these injuries affect the lower back.

The best way to prevent a back injury is to store heavy objects at waist level. Work methods and stations should also be designed to minimize the distance between the person and the object being handled.

Preventing Materials handling, Storage, Use, and Disposal Hazards continued...



Knowledge Key

Protect yourself when handling, using, or disposing of materials by wearing appropriate PPE for the eyes, hands, and feet. Don't move things that are too bulky or heaving by yourself. Practice safe lifting techniques and use aids, pads, handles, or wheels to move items, if possible.

Forklifts



To operate a forklift safely, you should:

- *Keep your arms and legs inside the truck*
- *Only handle stable loads*
- *Keep your speed low in case you need to stop*
- *Be careful when making sharp turns*
- *Travel in reverse if your load blocks your view*
- *Never take riders unless there is an approved seat*
- *Only ride with the forks raised at the lowest position possible*
- *Always wear safety belts or other restraint devices*
- *Never turn while driving up or down a ramp or incline*
- *Slow down and sound the horn at locations where vision is obstructed*
- *Don't drive up to anyone standing in front of a bench or other fixed object*



Forklifts continued...



There are four main causes of forklift injuries:

- *Forklifts striking workers on foot (pedestrians)*
- *Persons crushed by forklifts*
- *Persons falling from forklifts*
- *Forklift overturns*

When you're elevating workers with a forklift:

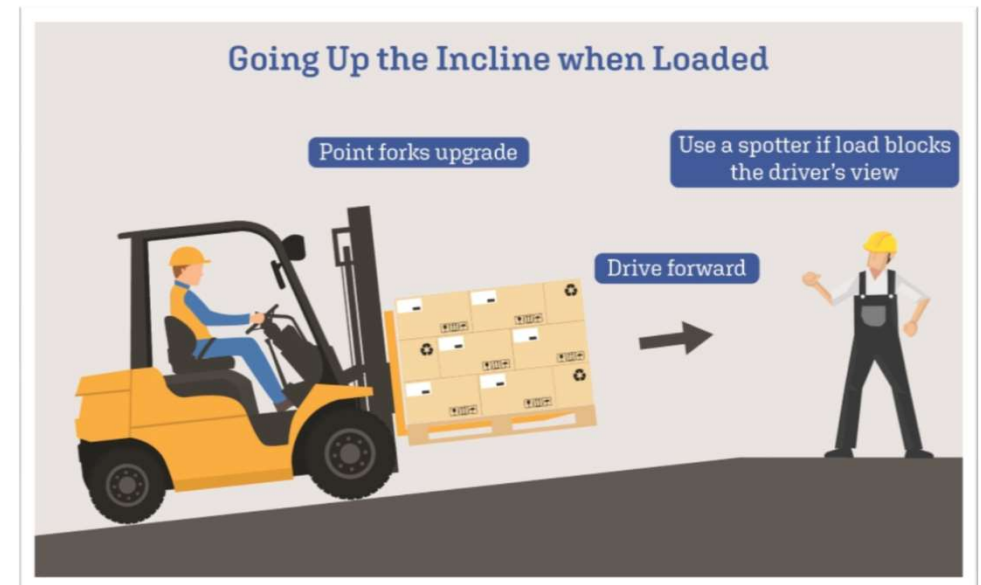
- *Don't use a forklift to elevate workers who are standing on the forks.*
- *Only lift personnel with an approved lift platform.*
- *Elevate a worker on an approved lift platform only when the vehicle is directly below the work area.*
- *Secure the elevating platform to the lifting carriage or forks of the forklift.*
- *Use a restraining means, such as rails, chains, or a body belt with a lanyard for the worker (or workers) on the platform.*



Forklifts continued...



When going up or down an incline when **loaded**:



Forklifts continued...



When going up or down an incline when **unloaded**:



Forklifts continued...



Knowledge Key

The main causes of injuries when using forklifts are overturns, striking pedestrians, being crushed by a forklift, or falling from one. However, the likelihood of injuries can be lessened by following safety practices, including safe driving practices, adhering to guidelines for driving on ramps, distributing loads correctly, using dock boards, and following struck-by guidelines. Only authorized personnel who are trained and over 18 should operate a forklift.

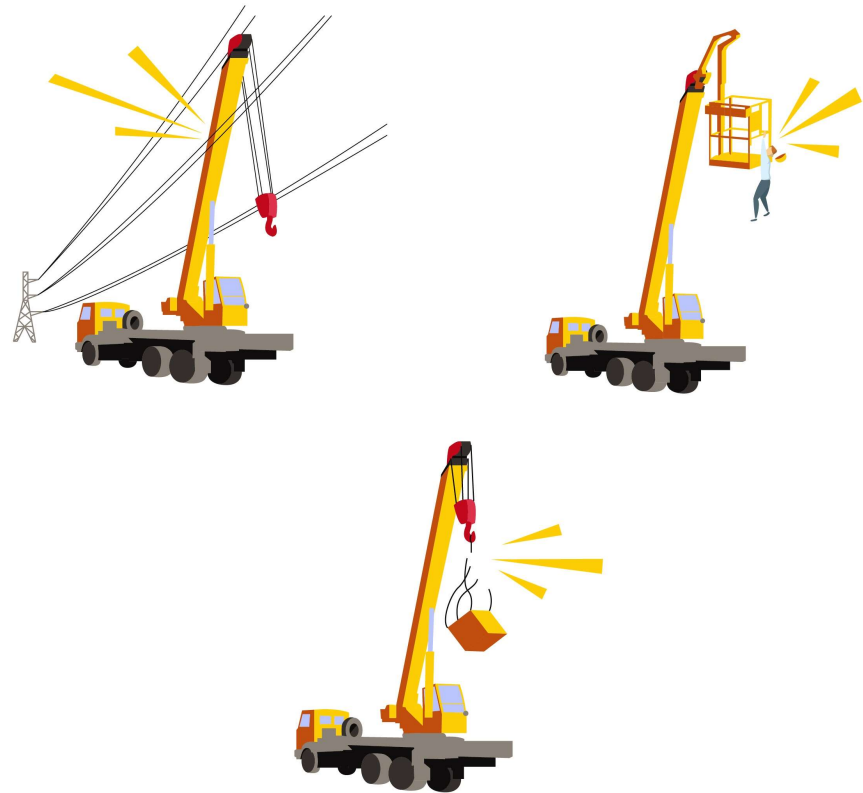
Cranes and Slings



The main **crane accidents** involve contact with **power lines**.

You can reduce sling hazards by following precautions when working with slings:

- *Immediately remove damaged or defective slings from service*
- *Don't shorten slings with knots, bolts, or other makeshift devices*
- *Don't kink sling legs*
- *Don't load slings beyond their rated capacity*
- *Keep suspended loads clear of all obstructions*
- *Remain clear of loads about to be lifted and suspended*
- *Do not engage in shock loading*
- *Avoid sudden crane acceleration and deceleration when moving suspended loads*

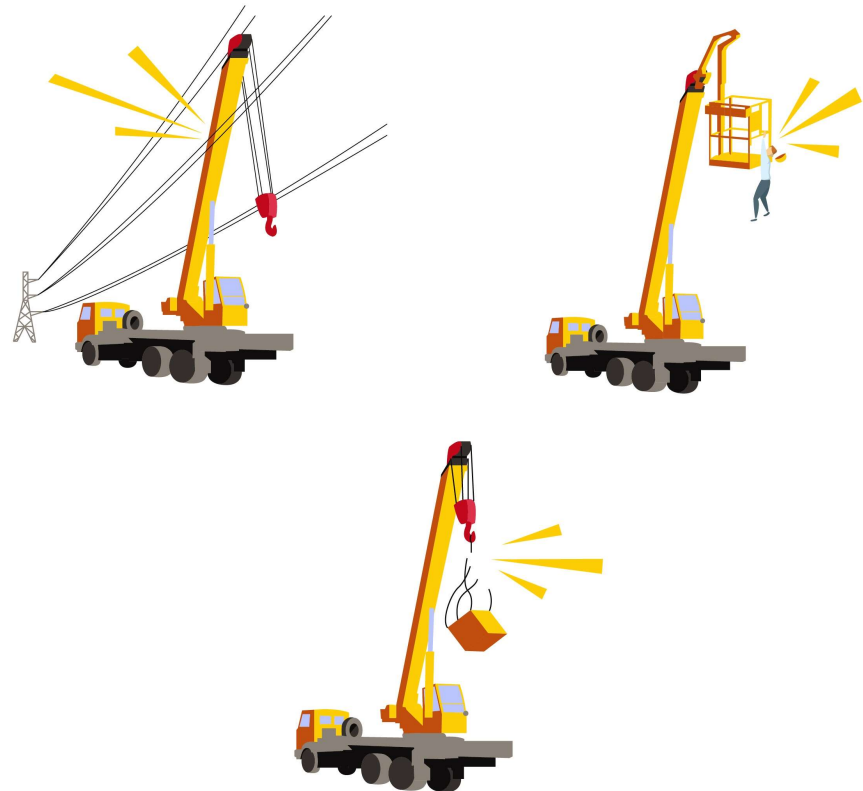


Cranes and Slings continued...



Here are some more **tips for safety** around cranes:

- *If you're a crane operator, you must be qualified and should know what you are lifting and how much it weighs.*
- *Don't leave unused slings suspended on a crane hook.*
- *Store wall-mounted cranes against the wall.*
- *Continuously observe equipment for any sign of problems during operation.*
- *Don't allow yourself to become distracted.*



Cranes and Slings continued...



Knowledge Key

The most common accidents occurring when using cranes can be reduced by following standard safety guidelines when operating a crane, ensuring inspections are carried out by competent personnel, paying attention to the crane load chart and adhering to its limits, and only allowing qualified workers to operate a crane. There are three main types of slings: chain, wire, and rope and mesh. The type you select to carry a load, depends on the load and environmental factors. There are standard precautions you can use to reduce hazards when working with slings. A competent person must inspect slings before and during use and damaged slings must never be used.

Conclusion



Your employers are required to follow standards when it comes to handling materials. These include:

- *Comply with OSHA standards related to materials handling, including training and inspection requirements*
- *Comply with manufacturers' requirements and recommendations for materials handling equipment*



Practice Questions



1. Ted needs to lift a heavy load. Using what you have learned, select the four options that describe how he can prevent injuries. **Select all that apply.**

- a. Break loads into parts.
- b. Lift with his back.
- c. Ask a co-worker to help when lifting heavy items
- d. Use handling aids
- e. Avoid lifting above shoulder level
- f. Keep the knees straight

2. What's the best way to find the load capacity of a crane?

- a. Call the manufacturer
- b. Look at the load capacity chart in the cab
- c. Ask co-workers
- d. It's best determined by lifting a load

3. Which of the following is true about slings?

- a. Alloy steel chains are impervious to damage.
- b. Slings should be inspected before each use.
- c. Damaged slings should be removed from service at the end of the workday.

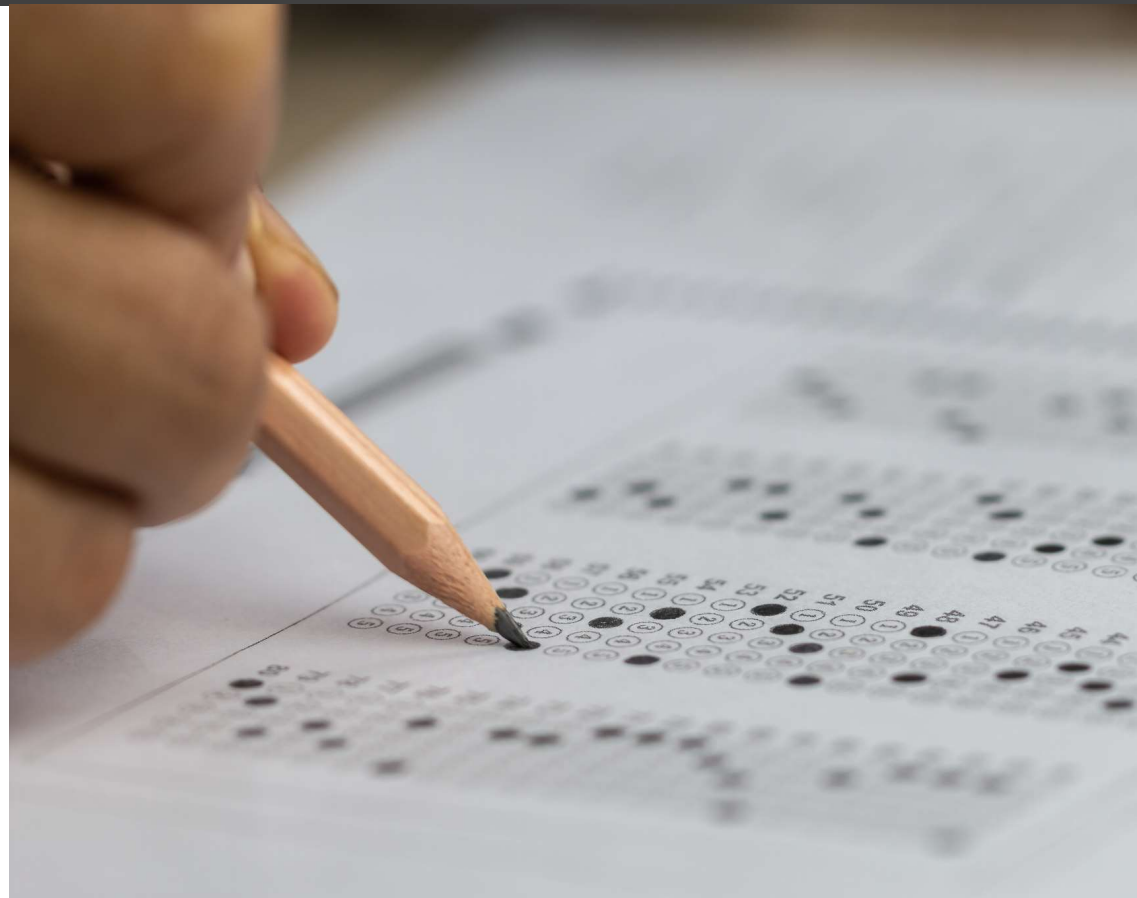
Practice Questions Answer Key



1. A,C,D,E

2. B

3. B



Great Job!



You have now completed the Materials Handling, Storage, Use, and Disposal topic.

