

Material Handling

Introduction

Handling and storing materials include a wide variety of tasks like:

- Hoisting tons of steel with a crane
- Driving a truck loaded with concrete blocks
- Carrying bags or materials manually



Material Handling and Storage

When handling and storing materials, you need to be aware of hazards such as:

- Falling objects
- Improperly stacked or stored materials
- Twisting and turning
- Unsupported bending

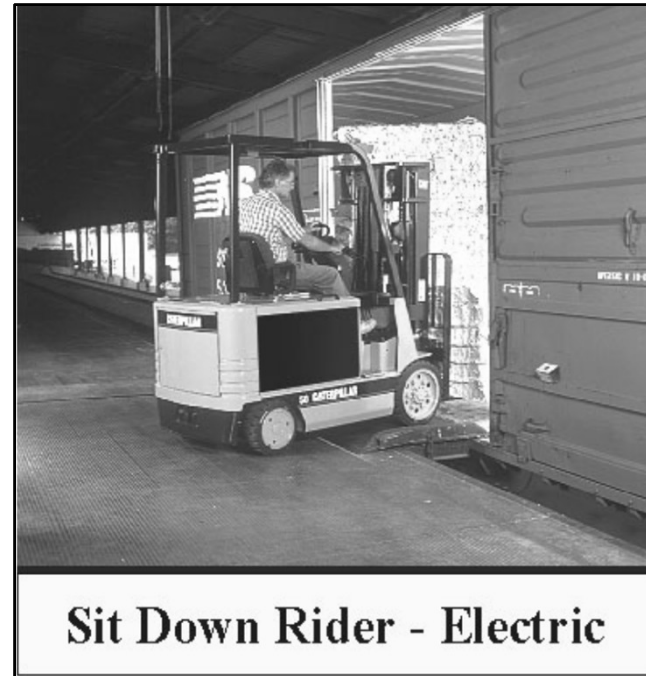
These hazards can result in injuries including:

- Strains and sprains
- Fractures
- Cuts and bruises

General Requirements

OSHA's general requirements for material handling cover the following topics:

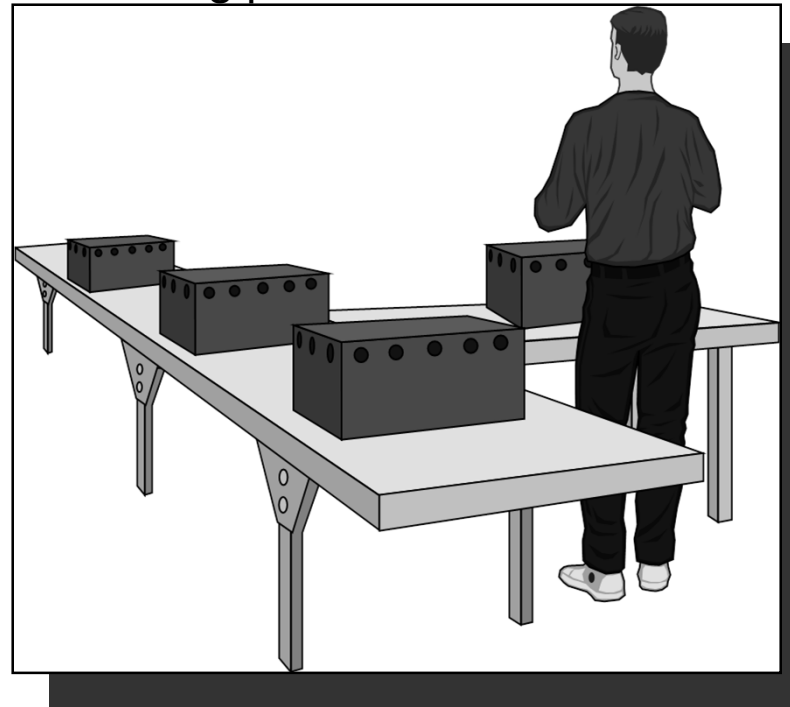
- Using mechanical equipment
- Secure storage
- Housekeeping
- Clearance limits
- Guardrails and covers
- Rolling railroad cars



Manual Material Handling

When moving material manually, take the following precautions:

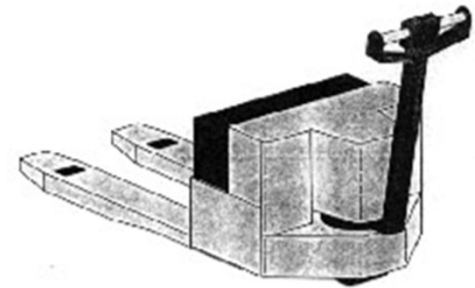
- Get help when necessary
- Use handles or holders
- Wear the appropriate personal protective equipment (PPE)
 - gloves
 - steel-toed shoes or boots
 - eye protection
 - hard hat
- Use proper lifting techniques



Material Handling Equipment

Using mechanical equipment such as a pallet jack or a powered industrial lift truck to move and store materials increases the potential for employee injuries.

Employees must be aware of manual handling safety concerns and safe equipment operating techniques.



Pallet Jack

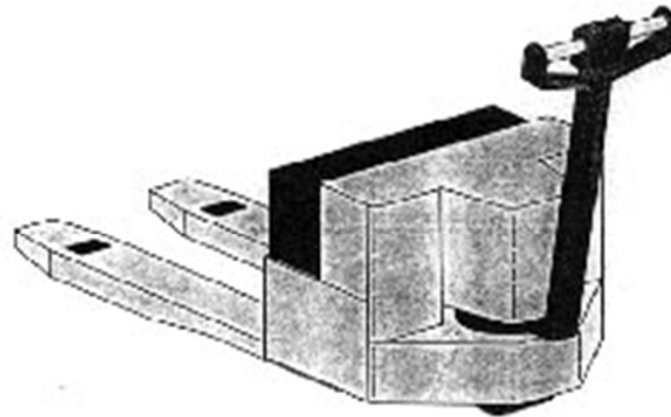


**Powered Industrial
Lift Truck**

Material Handling Equipment

When using material handling equipment, take the following precautions:

- Ensure the load is centered and stable on the equipment
- Adjust the load to the lowest position when traveling
- Do not exceed maximum weight restrictions



Pallet Jack

Powered Industrial Trucks

To help you work safely around powered industrial trucks, you must:

- Be 18 years of age and receive proper training before operating a powered industrial truck
- Never place arms and legs between the uprights of the mast
- Handle only stable and safely arranged load
- When dockboards are in use, make sure they are securely in place.



**Powered Industrial
Lift Truck**

Conveyors

Conveyors can make moving materials easier, but there are hazards involving their use.

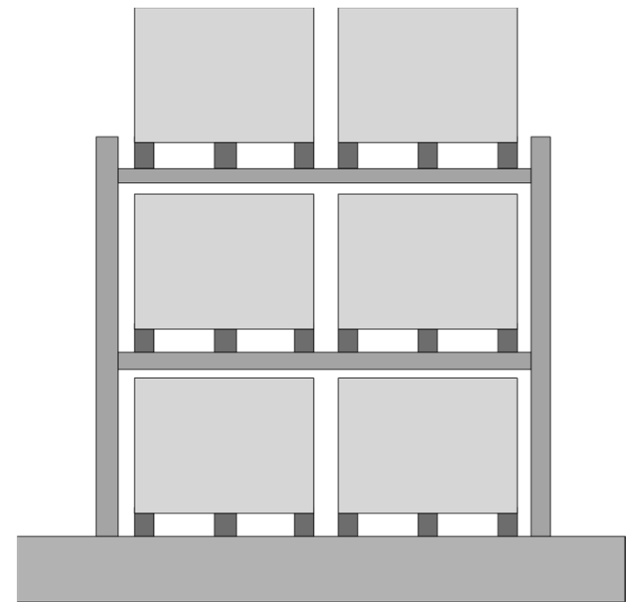
When working around conveyors:

- Be sure you know where the emergency stop button or pull cord is located
- Never sit or ride on a conveyor

Storing Materials

To prevent hazards when storing materials, employers must:

- Keep aisles and passageways clear
- Separate non-compatible materials
- Place bound material on racks and secure by stacking, blocking or interlocking



Stacking Techniques

Stacking materials can be dangerous if safety guidelines are not followed.
When stacking materials:

- Secure the material to prevent it from sliding, falling or collapsing
- Observe OSHA stacking height limitations
- Remove all nails from used lumber
- Consider the need for availability of the material.
- Material that cannot be stacked due to size, shape, or fragility can be safely stored on shelves or in bins

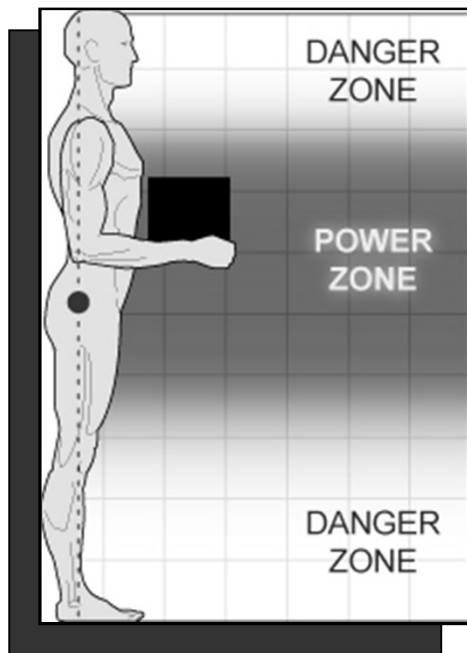
Summary

Hazards exist any time you are moving or storing materials. Key safety practices to remember are:

- Use proper lifting techniques; avoid bending and twisting.
- Don't lift heavy objects alone.
- You must be 18 and have the proper training before operating powered industrial trucks.
- Stack materials so that they are stable and self-supporting.

Materials Handling, Storage, Use, and Disposal, Subpart H

Injuries



- Lifting objects is a major cause of back injuries in the workplace. Other injuries include being struck by and/or crushed by equipment that is improperly stored and handled.
- Potential hazards relating to injuries include:
 - Improper, manual lifting or carrying loads that are too large or heavy
 - Being struck by materials or caught in pinch points
 - Being crushed by machines, falling materials, or improperly stored materials
 - Incorrectly cutting ties or securing devices

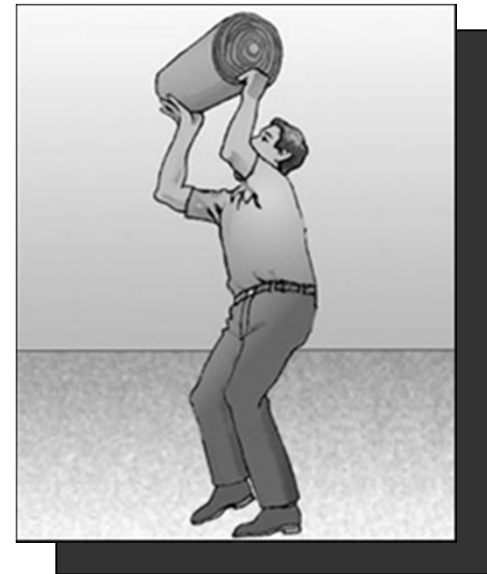
Injuries

- 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
- The best way to prevent a back injury is to store heavy objects at waist level.

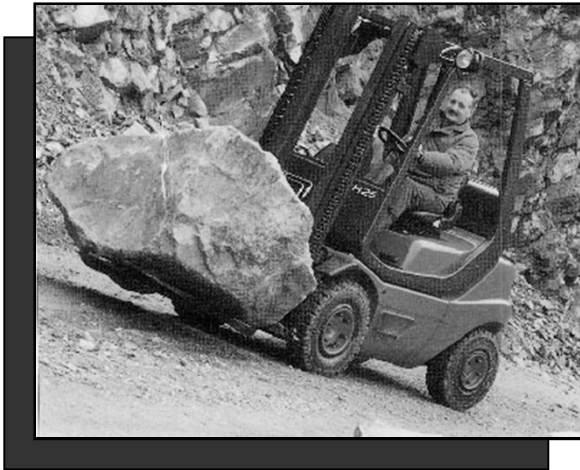
Preventing Injuries

To practice safe lifting:

- Break loads into 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



Materials Handling Equipment



- As well as knowing how to prevent injuries when manually handling materials, employees must also be trained in the proper use and limitations of the machines they operate.
- Forklift: Center the load on the forks and place it as close to the mast as possible in order to minimize the risk of the lift tipping or the load falling. Overloading a forklift makes a load hard to control and easy to tip. Place the load at the lowest possible position when moving the forklift.

Materials Handling Equipment

- Crane: Remember to be careful to:
 - Check the load chart in the cab
 - Inspect cranes frequently
 - Never lift people
 - Check overhead power lines
 - Ensure your area of travel is clear
- Slings: You should inspect slings carefully each day before use and also whenever service conditions warrant a special inspection. If they are damaged or defective, you should remove them from service.

Eliminating Hazards While Storing Materials

- When storing materials in tiers, you should secure them by stacking, racking, blocking, or interlocking them to prevent them from falling. You should also post safe load limits for each floor, and keep aisles and passageways clear.
- To dispose of materials, use an enclosed chute or drop into an enclosed area. You should also remove all scrap lumber, waste material, and trash from the immediate work area as the work progresses. Keep all solvent waste, oily rags, and flammable liquids in fire-resistant containers until you can remove them from the worksite.