



# Ladder & Stairway Safety

For S.C. Swiderski use only.





## Session Objectives



You will be able to:

- Understand the hazards associated with stairs and ladders in the construction industry
- Know the basic types of stairs and ladders
- Control and prevent common hazards associated with using ladders and stairs in the workplace

# INTRODUCTION

- Falls are the leading cause of fatalities in construction
- Falls from ladders make up about 1/3 of these fatalities
- Approximately 25,000 injuries per year due to falls from stairways and ladders
- Falls are preventable
- The most common height for a fall either resulting in a fatality or a serious injury is 6 to 10 ft in height



# Types of Ladders and Stairways

## Ladders:

- Job Made Wooden
- Fixed
- Portable
- Self-supporting
- non-self-supporting

## Stairways:

- Temporary
- Permanent



# Hazards Associated with Stairs and Ladders

- Slips, Trips and Falls
- Electrical Hazards
- Falling Objects
- Protruding objects, sharp edges, or rough spots



**SLIP AND FALL  
INCIDENT REPOF**

of week: \_\_\_\_\_

# REDUCING OR ELIMINATING HAZARDS

- Ladder-use practices
  - Extend side rails 3 feet above the upper landing surface
  - Don't exceed load/capacity
  - Use only as designed
  - Angle ladders so the horizontal distance of bottom is  $\frac{1}{4}$  the working length of the ladder





# Reducing or Eliminating Hazards

- Avoid use of ladder on surfaces that are:
  - Unstable
  - Not level
  - Slippery
- Secure ladders to prevent movement





# Reducing or Eliminating Hazards

- Prevent movement/displacement
  - Secure
  - Barricade
- Keep clear areas around top and bottom
- Equally support rails of non-self-supporting ladder at the top





# Reducing or Eliminating Hazards



- Don't move, shift, or extend while in use
- When exposed to energized electrical equipment, use nonconductive side rails
- Don't use the top step of a stepladder
- Don't climb the cross-bracing on the rear section of a stepladder



# Reducing or Eliminating Hazards



- Don't use single-rail ladders
- Inspect (competent person)
  - Visible defects periodically
  - After any incident that could affect their safe use



# Reducing or Eliminating Hazards

- Ladder requirements:
  - Provide double-cleated ladder or two or more ladders
    - When having 25 or more employees using as only means of access to work area
    - When serves two-way traffic





# Reducing or Eliminating Hazards

- Don't tie or fasten together to create longer sections, unless design allows
- Stepladder must have a metal spreader or locking device to hold in open position



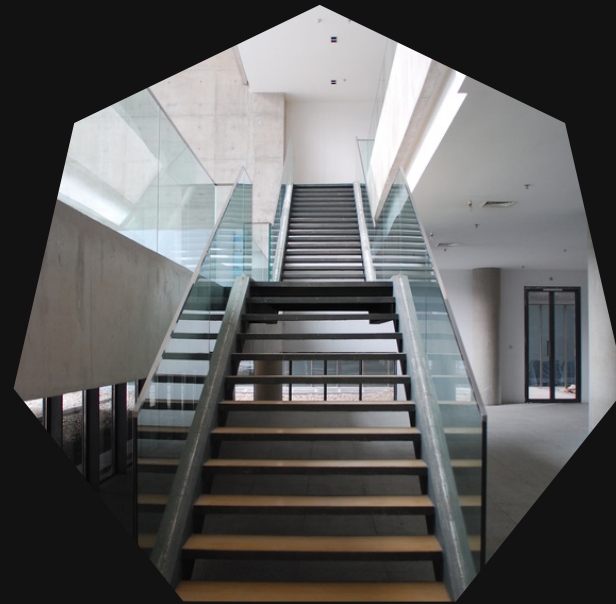


# •Reducing or Eliminating Hazards



## Platforms

Offset two or more separate ladders used to reach an elevated work area



## Ladder surface

Free of projections, sharp edges, or abrasive materials that could puncture or cut user, or snag clothing



## Wood ladders

Not coated with any opaque covering, except for identification or warning labels only on one face of a side rail



## Defective ladders

Remove defective ladders from service if you find broken or missing parts, indication of corrosion, or other faulty or defective components. If you have a defective ladder, be sure to tag it DO NOT USE



# Reducing or Eliminating Hazards

- **Stairs**

- Handrails
- Stair rail systems
- Stair requirements
- Temporary pan stairs





# REDUCING OR ELIMINATING HAZARDS

- All stairways used during construction
  - Landings need to be at least 30” deep and 22” wide at every 12 feet or less if vertical rise
  - Installed at least 30 degrees, no more than 50 degrees from the horizontal
  - Riser height or stair tread depth must not exceed ¼”
  - Platform must be provided at least 20” in width beyond the swing of the door
  - Metal pan landings and metal pan treads need to be secure
  - Stairways need to be cleared of dangerous projections
  - Take care of slippery conditions
  - Spiral stairways may not be used if not permanent part of structure





# Reducing or Eliminating Hazards



- Temporary stairways used during construction
  - Stairways with metal pan landings and treads must not be used where the treads and/or landings have not been filled in with concrete or other materials
  - All treads and landings must be replaced when worn below the top edge of the pan
  - Skeleton metal frame structures and steps must not be used unless fitted with secured temporary treads and landings
  - Temporary treads are made of wood or other solid material and installed the full width and depth of the stair



# REDUCING AND ELIMINATING HAZARDS

- Stair Rail Requirements
  - Handrail provides a handhold for support
  - Stair rail system prevent employees from falling
  - Four or more risers generally require a stair rail
  - Winding/Spiral stairways must be equipped with a handrail on stairways with tread width less than 6"
  - Stair rails must not be less than 36" from upper surface
  - Unprotected sides and edges require standard 42" guardrail systems
  - When stair rail systems serve as a handrail, height should not exceed 37" nor less than 36"



# REDUCING AND ELIMINATING HAZARDS

- Handrail Requirements
  - Handrails and top rails must be able to withstand 200 pounds
  - Height of the handrails must not exceed 37" nor less than 30"
  - Provide adequate handhold for employees to grasp to prevent falls
  - Temporary handrails must have minimum clearance of 3"
  - Stairways with 4 or more risers, or exceed 30" in height, must have at least one handrail
  - Winding or spiral stairways require a handrail where tread width is less than 6"





# Reducing or Eliminating Hazards

- Mid Rail Requirements
  - Mid rails, screens, mesh, intermediate vertical members must be provided between top rail and stairway
  - Stair rail systems and handrails must be surfaced
  - Stair rails systems and handrails must be built to prevent dangerous projections
  - Intermediate vertical members cannot exceed 19" apart
  - Other structural members need to be installed to ensure no openings in the stair rail system – no more than 19" wide





# Reducing or Eliminating Hazards

- Stairs and 3-Point Control
  - Requires two continuous handrails
  - Arms and hands should be free of materials
  - Stairs can be very steep and present serious fall hazards





# KEY POINTS

- Proper safe work practices need to be followed when using ladders or stairways to avoid injury or possibly even death
- For additional information on ladder safety, visit [www.OSHA.gov](http://www.OSHA.gov) to review the following standards for general industry 1910.21, 1910.26, 1010.25, as well as the construction safety standards 1926, and 1050 - 1060





# TAKE THE QUIZ

- <https://forms.office.com/Pages/ResponsePage.aspx?id=RZJ-M6ZIREqmNwvW9nbIKxyzzaSUgJJFgf5zZdrqY-IUQIIITIBZTTJYNjICRUI2QUVTSTJNTINGTi4u>