



Stairway and Ladder Training



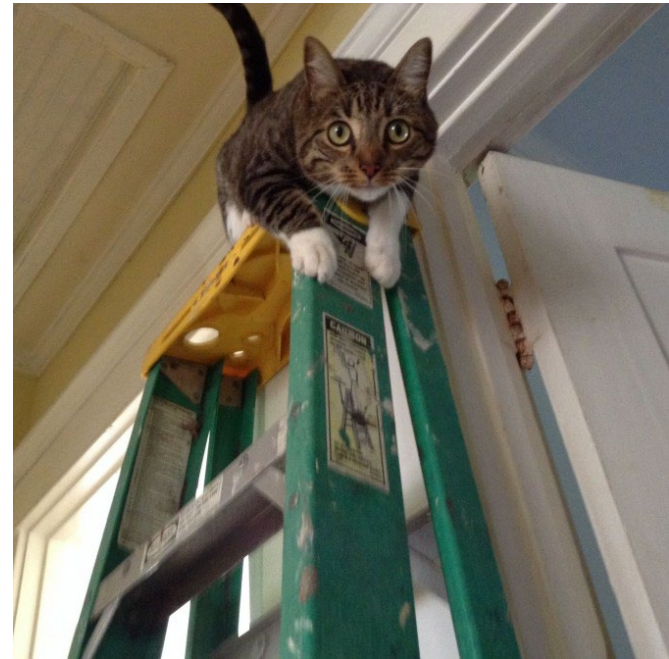
Developed by Environmental Health and Safety



Hazards



- Stairways and ladders cause many injuries and fatalities among construction workers
- About half the injuries caused by slips, trips, and falls from ladders and stairways require time off the job



Improper use of the top rung of a step ladder.



Slips, Trips, and Falls on Stairways and Ladders



- At the end of this training, you should be able to list or describe:
 - Safety guidelines and requirements for stairways used at a construction site or during construction
 - Safe practice and requirements for ladders used at a construction site or during construction



Stairway or Ladder

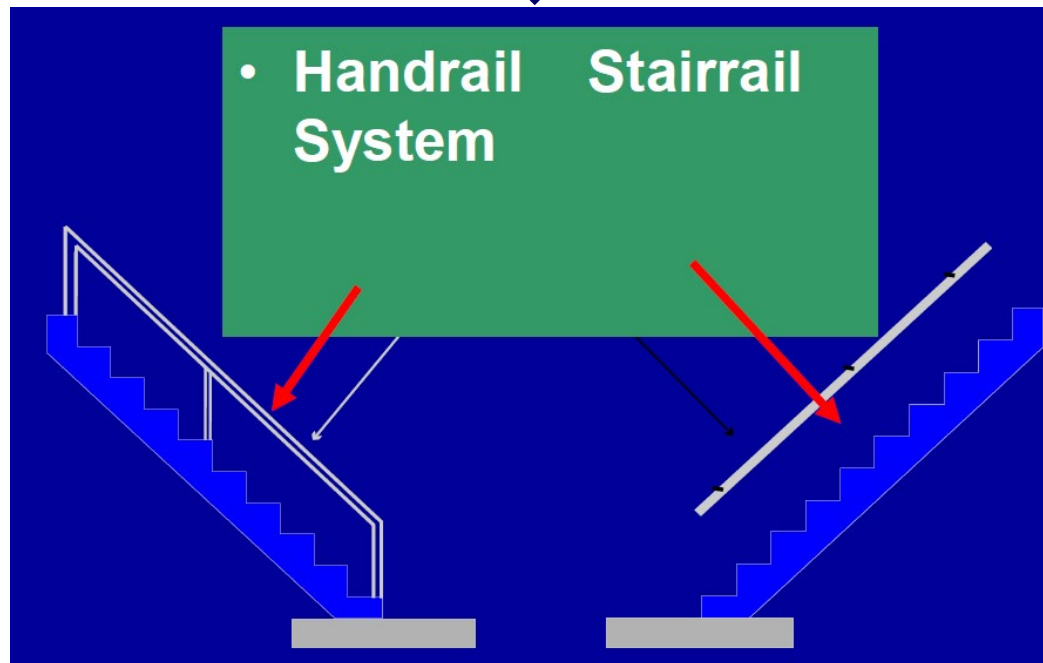


- There must be a stairway, ramp, or ladder at point of access where there is an elevation break of 19 inches or more





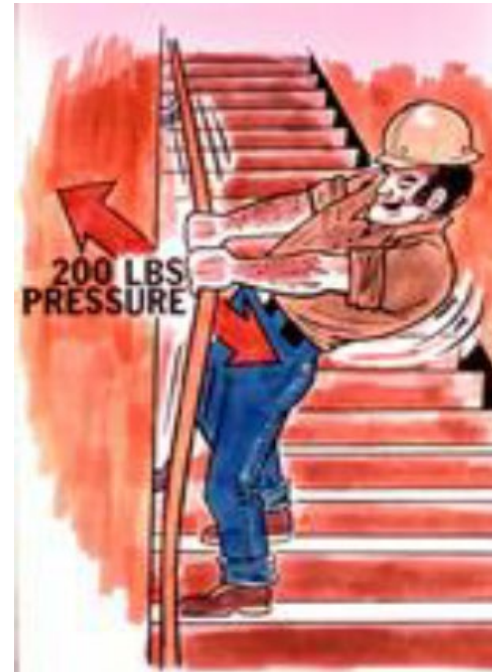
Handrail vs. Stairrail



Handrail and Top Rail Strength



- Rails must be able to withstand a force of 200 lbs.





Handrails



- Stairways with four or more risers, or higher than 30 inches, must be equipped with at least one handrail



The stairway to this platform has more than 4 risers and is not guarded.



Stair rails

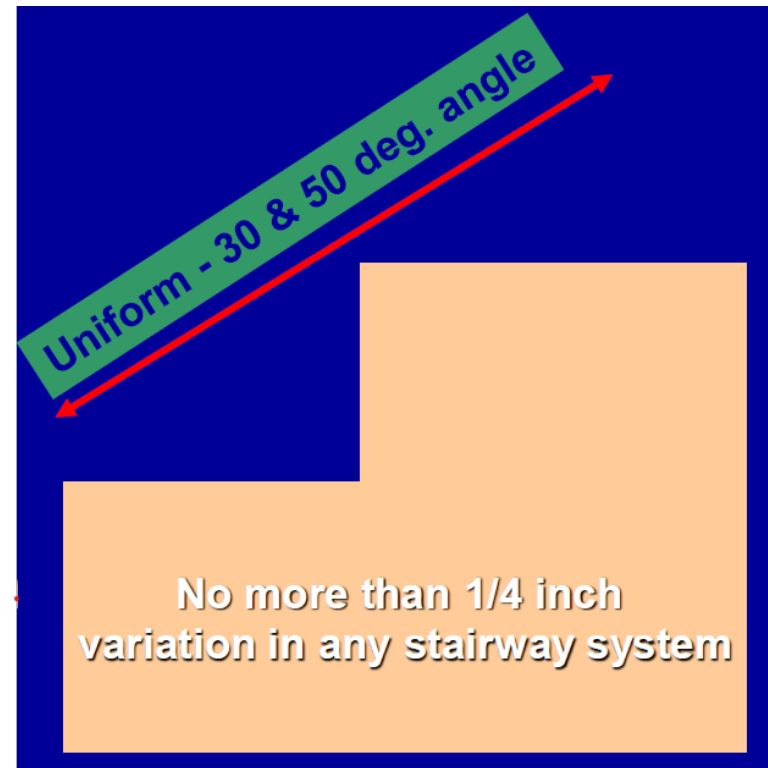
- Stairways with four or more risers or more than 30 inches high must have a stair rail along each unprotected side or edge





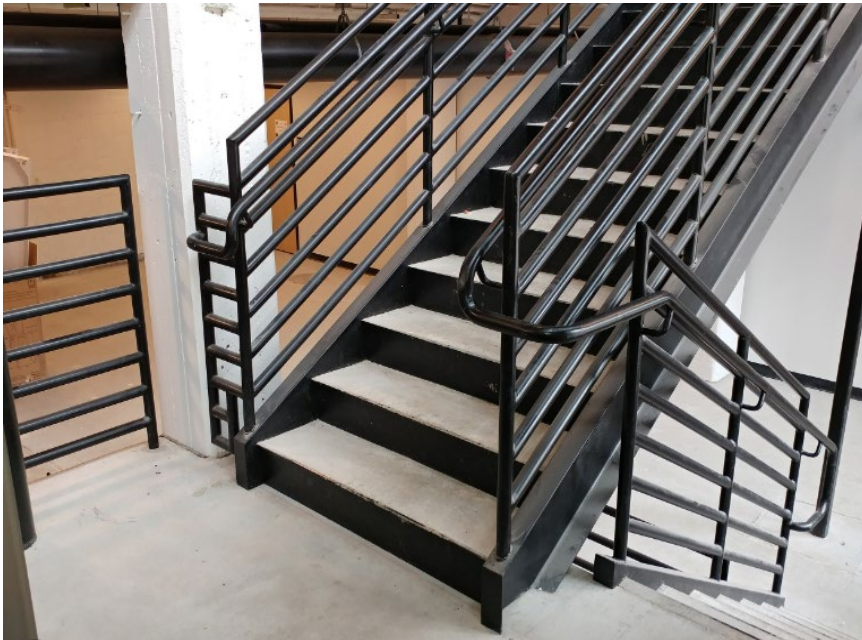
Stairs

- Install between 30 and 50 degrees
- Must have uniform riser height and tread depth, with less than a $\frac{1}{4}$ inch variation





Temporary Stairways

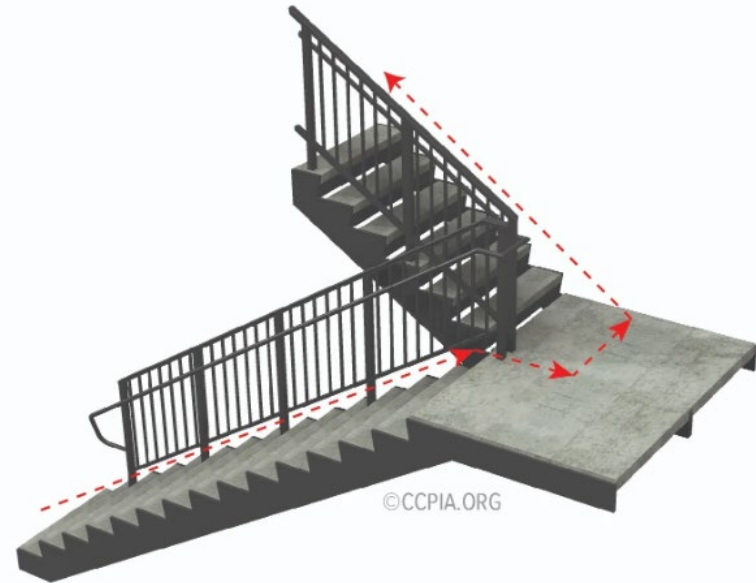


- Only use pan stairs if filled with filler material at least to the top edge of each pan



Stairway Landings

- Stairway landings must be at least 30 inches deep and 22 inches wide at every 12 feet or less of vertical rise
- Unprotected sides of landings must have standard 42 inches guardrail systems

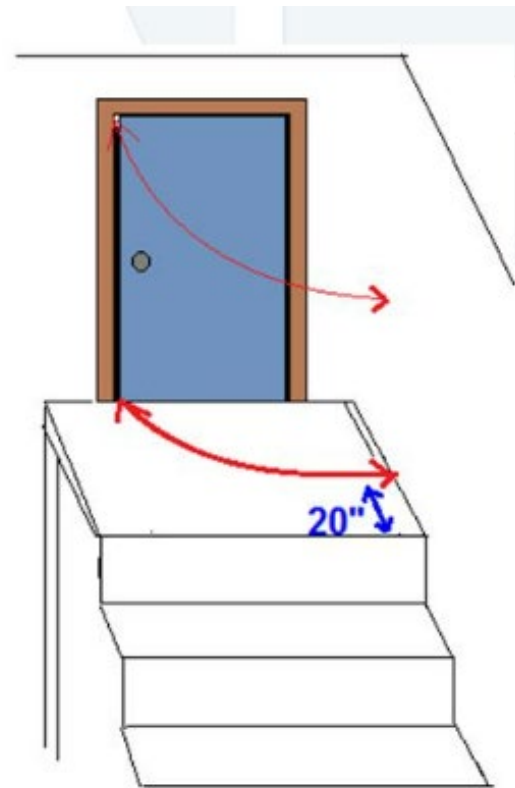


A landing or floor must be present at the top and bottom of each stairway or change in direction.



Platforms and Swing Doors

- Where doors or gates open directly on a stairway, provide a platform that extends at least 20 inches beyond the swing of the door.





Dangerous Conditions



- Fix slippery conditions before using
- Stairway parts must be free of projections which may cause injuries or snag clothing



Ladders





General Ladder Requirements



- Ladders must be kept in a safe condition
- Keep the area around the top and bottom of a ladder clear
- Ensure rungs, cleats, and steps are level and uniformly spaced
- Ensure rungs are spaced 10-14 inches apart
- Keep ladders free from slipping hazards

General Ladder Requirements

- Use ladders only for their designed purpose
- DON'T Tie ladders together to make longer sections
- DON'T use single rail ladders
- DON'T load ladders beyond the maximum load for which they were built, nor beyond the manufacturer's rated capacity





Securing Ladders

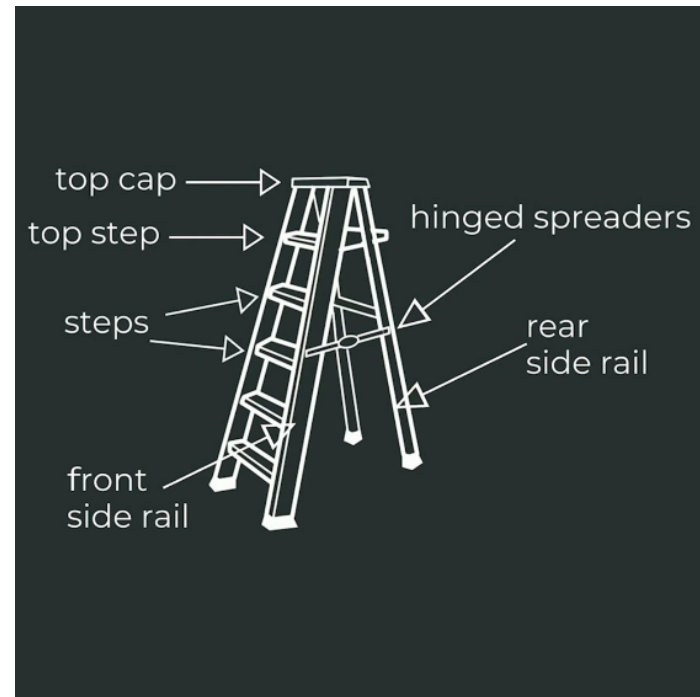
- Secure ladders to prevent accidental movement due to workplace activity
- Only use ladders on stable and level surfaces, unless secured
- Do not use ladders on slippery surfaces unless secured or provided with slip-resistant feet





Portable Ladders

- Inspect before use for cracks, dents, and missing rungs
- Design or treat rungs to minimize slipping
- Side rails – at least 11 ½ inches apart
- Must support 4x max load





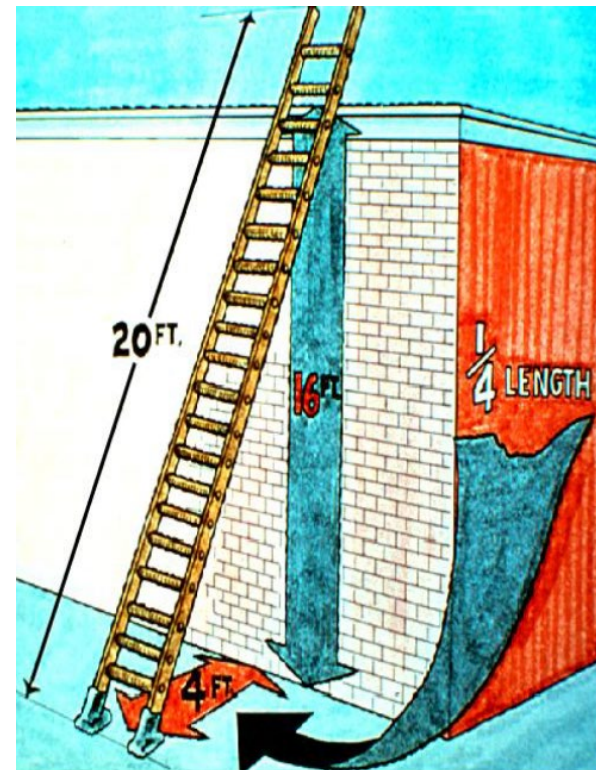
Painting wood ladders

- Don't paint ladders
- Don't use an opaque covering or varnish on a wood ladder



Ladder Angle

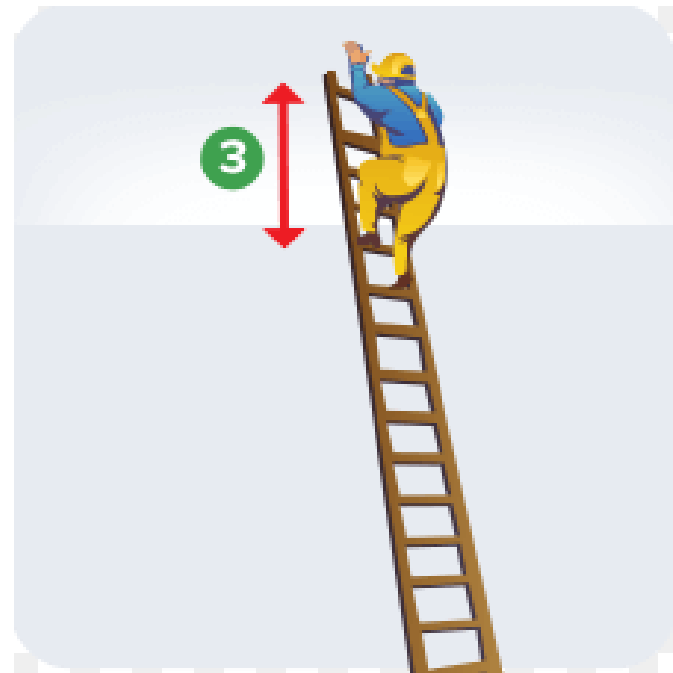
- Non-self-supporting ladders: those that lean against a wall or other support
- Position at an angle where the horizontal distance from the top support to the foot of the ladder is $\frac{1}{4}$ the working length of the ladder





Ladder Rail Extension

- When using a portable ladder for access to an upper landing surface, the side rails must extend at least 3 feet above the upper landing surface





Tall Fixed Ladder Requirements

- Equip a fixed ladder 24 feet or longer with either a
 - Ladder safety device
 - Self-retracting lifelines with rest platforms every 150 ft
 - Cage or well, and multiple ladder sections, each section not exceeding 50 feet



Near Energized Electrical Equipment

- If using ladders where the employee or the ladder could contact exposed energized electrical equipment, they must have nonconductive side rails such as wood or fiberglass



ALUMINIUM LADDER

**DO NOT USE NEAR
ELECTRICITY OR WATER**



Top Step

- Do not use the top or top step of a stepladder as a step





Cross bracing

- Don't use cross bracing on the rear of a stepladder for climbing unless the ladder is designed for that

Back rungs
designed to be
used





Damaged or Defective Ladders

- A competent person must inspect ladders for visible defects, like broken or missing rungs
- If a defective ladder is found, immediately mark it defective or tag it “Do Not Use”
- Withdraw defective ladders from service until repaired





Climbing the Ladder

- Face the ladder when going up or down
- Use at least one hand to grab the ladder when going up or down
- Do not carry any object or load that could cause you to lose balance





Training



- A competent person must train each employee in the following areas, as applicable
 - The nature of fall hazards in the work area
 - The correct procedures for erecting, maintain, disassembling the fall protection systems to be used
 - The proper construction, use, placement, and care in handling of all stairways and ladders
 - The maximum intended load-carrying capacities of ladders