



NPCE

National Precast Concrete Association

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Fall Protection Working at Heights

Types of Fall Protection Systems

Guardrail Systems

Barriers erected to prevent a person from falling to a lower level against a hazard such as a moving conveyor belt.

These barriers have a top rail, mid rail, and toe board that are typically supported by vertical posts an/or parts of the structure.

Fall Arrest Systems

Fall protection systems designed to limit a persons fall and reduce the possibility of injury resulting from the fall. These systems consist of the following three components:

- Body Harness
- Connecting Device
- Anchoring Device

Positioning Device Systems

Fall protection systems designed to keep a person away from a fall area through the selection of an appropriate length lanyard. These systems consist of the following components

- Body Harness
- Connecting Device
- Anchoring Device

Safety Netting

Nets placed below the working surface to catch any equipment or person(s) that may fall.

Walking and Working Surfaces



Slips, trips and falls

- Account for the majority of general industry accidents
- 15% of all accidental deaths
- More fatalities than all other causes besides motor vehicles
- Floor of each workroom is maintained in a clean and to the extent feasible, in a dry condition. When wet processes are used, drainage must be maintained and, to the extent feasible, dry standing places, such as false floors, platforms, and mats must be provided
- OSHA standard for walking and working surfaces: 1910.22

**THINK
SAFETY!
WORK
SAFELY!**

Walking and Working Surfaces Cont.

- Surfaces shall be maintained free of hazards such as sharp or protruding objects, loose boards, corrosion, leaks, spills, snow, and ice
- Walking and working surfaces must support the maximum intended load for that surface
- Ensure each employee is provided and uses a safe mean of egress to and from walking-working surfaces.
- Walking-working surfaces are inspected regularly and as necessary and maintained in a safe condition.
- Hazardous conditions shall be corrected or repaired before an employee uses the walking-working surface again.

Housekeeping



- Work areas should be clean and dry
- Platforms should be kept clean from debris to avoid tripping over them and falling
- Walkways and platforms shall be kept free of wires and concrete rock debris
- When a work area is clear of debris the chance of slipping, tripping and falling is greatly reduced

Guardrails and Catwalks

- Best method for fall protection
- More acceptable than the use of body harnesses or positioning devices
- Guardrails shall be surfaced to prevent injuries from punctures, lacerations, and snagging clothes
- Catwalks shall be clear of debris to reduce slipping, tripping, and falling hazards



Railing and Stairways

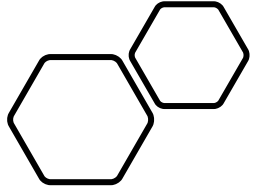
OSHA Standard for Railing: 1910.29(b)

- Vertical height of railing shall be 42 inches +/- 3 inches from top of rail to the floor
- Ends of rails need to be free of a projection hazard
- Standard railing consists of a top rail, mid rail, and vertical posts
- Top rails should be smooth surfaced

OSHA Standard for Stairways: 1910.25

- Fixed industrial stairs require a minimum width of 22 inches, must be able to carry 5 times the expected load, and tread must be slip resistant with uniform rise height and tread width
- Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails





Portable Ladders

- Ladders used to gain access to a roof or other area must extend at least 3 feet above the point of support
- Before each use check ladders for visible defects and remove defective ladders from service and tag them “Dangerous, Do Not Use”
- Never use ladders horizontally as scaffolds or work platforms
- Rung and Cleat Ladders should be used 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

