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# Slips, Trips, and Falls

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## Walking/Working Surfaces, 29 CFR 1910 Subpart D-Slips, trips, and falls constitute the majority of general industry accidents

**They cause 15% of all accidental deaths, and are second only to motor vehicles as a cause of fatalities. Due to the potential for tragic injury, OSHA's walking and working surfaces standard applies to all permanent places of employment, except where only domestic, mining, or agricultural work is performed.**

1. General Requirements
  - Housekeeping
    - Workplaces must be kept clean, orderly, and sanitary
    - Workroom floors must be maintained as clean and dry as possible
  - Aisles and Passageways
    - Keep clear and move obstructions that could create a hazard
    - Mark permanent aisles and passageways
    - Aisles must be sufficiently wide where mechanical handling equipment is used
  - Covers and Guardrails
    - Provide covers and/or guardrails to protect workers from the hazards of open pits, tanks, vats, ditches, and the like.
  - Floor Loading Protection
    - Load ratings must be marked on plates and be conspicuously posted
    - Do not exceed the load rating limit
2. Floor Openings
  - What is a Floor Opening?
    - OSHA considers a floor opening a hole in any walking or working surface that measures more than 12 inches in its least dimension and through which a person can fall.
  - Floor Guarding Types
    - Standard railing consists of top rail, mid rail, and posts. Height from the upper

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surface of top rail to floor level is 42-inches and mid-rail height is 21-inches.

- Standard toe board is 4-inches high, with not more than 1/4-inch clearance above the floor.
  - Stairway Floor Openings
    - Must be guarded by a standard railing on all exposed sides (except at entrance).
  - Ladderway Floor Openings
    - Guard with a standard railing with toe board on all exposed sides (except entrance)
    - Guard the passage through the railing with a swinging gate or offset it to prevent someone from walking into the opening
  - Floor Hole
    - An opening measuring less than 12 in. but more than 1 in. in its least dimension, in a floor, platform, pavement or yard, through which materials but not persons may fall
    - Every floor hole into which persons can accidentally walk must be guarded
3. Wall Opening
- Opening at least 30 in. high and 18 in. wide, in a wall or partition, through which persons may fall
  - Wall openings from which there is a drop of more than 4 feet must be guarded
4. Open-Sided Floors and Platforms
- Open-sided floors or platforms 4 feet or more above adjacent floor or ground level must be guarded by a standard railing (or equivalent) on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder A toe board is required when, beneath the open sides:
    - persons can pass,
    - there is moving machinery, or
    - there is equipment with which falling materials could create a hazardRegardless of height, a standard railing and toe board must be used to guard:
5. Stairways
- Flights of stairs with four or more risers must have standard stair railings or handrails.
6. Fixed Industrial Stairs
- Treads must be slip resistant with uniform rise height and tread width
  - Must be able to carry 5 times expected load; minimum of 1000 pounds
  - Minimum width of 22 inches
7. Portable Ladder
- Ladders used to gain access to a roof or other area must extend at least 3 feet above the point of support
  - Withdraw defective ladders from service and tag or mark "Dangerous, Do Not Use"
  - Never use ladders in a horizontal position as scaffolds or work platforms
  - Never use metal ladders near electrical equipment
8. Ladder Angle
- Use at angle where the horizontal distance from the top support to the foot of the ladder is 1/4 the working length of the ladder (length along ladder between the foot and top support). Example if the length of the ladders highest contact point to the ground was 16 feet, then the feet of the ladder would need to be four feet from the wall. A simple way to ensure you have the proper angle is to stand with your feet at the base of the ladder and extend your arms straight forward. If the ladder is at the proper angle your fingertips will touch the ladder.
9. Fixed Ladder
- Permanently attached to a structure, building or equipment
  - Cages or wells required if longer than 20 ft. to a maximum unbroken length of 30 ft.
  - Ladder safety devices may be used on tower, water tank and chimney ladders over 20 ft. in unbroken length instead of cage protection

## 10. Scaffolding- General Requirements

- Must be capable of supporting four times the maximum intended load
- Do not alter or move while in use
- Protect workers on scaffolds from overhead hazards
- If higher than 10 ft., use guardrails, mid-rails and toe boards
- Use wire mesh between the toe board and guardrail if people work or pass underneath
- Must be equipped with access ladder or equivalent Summary
- Slips, trips, and falls constitute the majority of general industry accidents
- OSHA's standards for walking and working surfaces include requirements for housekeeping, guarding floor and wall openings and holes, industrial stairs and ladders
- Keeping working surfaces clean, dry, and uncluttered can prevent many workplace accidents

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