Walking & Working Surfaces

OSHA Subpart D – Walking-Working Surfaces §1910.21
Walking-Working Surface mean…

…any horizontal or vertical surface on or through which an employee walks, works, or gains access to a workplace location.
Introduction

Slips, trips and falls cause:
- the majority of general industry accidents
- 15 percent of all accidental deaths
- more fatalities than all other causes but motor vehicles

OSHA’s standards for walking and working surfaces apply to all permanent places of employment, except where only domestic, mining, or agricultural work is performed
DOL reports in industry

Falls account for almost 400,000 workplace injuries each year

Nearly 1100 day
50% fall where standing

What causes you to SLIP?

Thing like –
- Paper,
- Liquids (especially oil),
- Ice,
- Loose debris.
Walking Working Surfaces

What causes you to trip?

- Power cables
- Extension cords,
- Open file cabinet drawers
- Frayed carpeting
- Pallets

Changing Environment

The working environment can change. Always be on the lookout for things that weren’t there before.
Walking Working Surfaces

Most common injury to workers in the printing industry

Workers tripping over pallets can lead to:
- broken bones
- torn ligaments
- concussions
- cuts
- abrasions (scrapes)
- contusions (bruises)

What is the average height of a FATAL fall?

Printing Industries Alliance
Is It…

6 Feet?
8 Feet?
10 Feet?
4 Feet?
12 Feet?

The average FATAL fall is only

… 4 Feet!

It is only 4 feet. Think about it. If your feet are 4 feet off the ground, how high is your head?
General Requirements
Housekeeping

All places of employment

To include work stations, passageways, storerooms, service rooms and walking-working surfaces are to be kept in a clean, orderly condition, free of hazards.

General Requirements
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
General Requirements
Floor Loading Protection

- Load ratings must be marked on plates and be conspicuously posted
- Do not exceed the load rating limit

Floor Hole

- An opening measuring less than 12 in. but more than 2 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 by either:
  - standard railing with toeboard
  - cover
General Requirements
Covers and Guardrails

Provide covers and/or guardrails to protect workers from the hazards of open pits, tanks, vats, ditches, and the like.

Floor Opening

An opening measuring 12 inches or more in its least dimension in a floor, platform, pavement, or yard, through which persons may fall.
Raised Surfaces

What is considered a raised surface?

It is an opening or gap space in a walking surface that is at least 30 inches high and 18 inches wide that an employee can trip on. In addition, any device that will raise the employee 8 inches or more from the floor is considered a raised surface.
The most common devices that will raise the employee 8 inches or more from the floor are -

- Stairs
- Ladders
- Step Stools
- Raised Walkways
- Platforms
- Dock Boards

To remain safe when walking or working on a raised surface you must maintain 3 points of contact.

2 feet and 1 hand or 2 hands and 1 foot
STAIRWAYS

- Stairway injuries represent a leading cause of accidents. National Safety Council statistics rank stairway injuries second only to motor vehicle accidents among leading causes of accidents.
- Each year stairway accidents cause over one million injuries and 12,000 deaths.
STAIRWAYS

The height of the hand rail must be at least 36 inches but not more than 38 inches. *(If installed before January 2017, minimum height is 30 inches and a maximum height of 42 inches.)*

STAIRWAYS

Rails must be capable of withstanding a force of 200 lbs. applied in any downward or outward direction.
STAIRWAYS

Rails must have a shape and dimension necessary so an employee can grasp the rail firmly.

STAIRWAYS

Rails must be smooth to protect employees from injury, such as punctures or lacerations, and to prevent catching or snagging clothing.
Guarding Floor Openings
Definitions

**Standard railing.** Consists of top rail, mid rail, and posts. Height from the upper surface of top rail to floor level is 42 inches. Mid rail height is 21 inches.

**Standard toeboard.** 4 inches high, with not more than ¼-inch clearance above the floor.

Stairway Floor Openings

Must be guarded by a standard railing on all exposed sides (except at entrance).
Stairways

Flights of stairs with four or more risers must have standard stair railings or handrails.

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
- Maximum riser 9-1/2”
- Riser height must be uniform throughout staircase
- Minimum width of 22 inches

Violation here – several steps bent and damaged
Wall Openings

- 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

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 toeboard 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 hazard
Open-Sided Floors, Walkways, Platforms, and Runways

Regardless of height, a standard railing and toeboard must be used to guard:
- open-sided floors
- walkways
- platforms
- runway

above or adjacent to dangerous equipment or where any hazard may exist.

STEP STOOLS

Step stools that raise a person 8 inches or more are subject to the same rules as a ladder!
Step Stools

- Rolling Wheels
- Make sure feet are not damaged and are properly attached.

Ladders
General Rules when using a Ladder

• Ladders are used only for the purpose for which they are designed.
• Ladders should be inspected before each use.
• When climbing up or down you must always face the ladder.
• NEVER carry any object or load that could cause the employee to lose balance and fall when climbing up or down.

General Rules when using a Ladder

• Ladders are used only on stable and level surfaces.
• Ladders must not be shifted, moved, or extended while someone is on it.
• Ladders must not be placed on boxes, barrels, or other unstable bases to obtain additional height.
General Rules when using a Ladder

• Ladder surfaces must be free of puncture and laceration hazards.
• When moving the ladder, be sure all tools and any parts are removed from the ladder before moving it.
• Ladders found to be defective must be immediately tagged “DANGEROUS: DO NOT USE”

Platform Ladder

Always hold Handrails when Climbing Up or Down

Safety Step
Portable Ladder

- Lock in closed position

Non-Step

Portable Ladders

- 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

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Use at 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 (length along ladder between the foot and top support).
Placing the extension ladder

3 Feet above platform

Correct Height

Ladder

Arm & Elbow straight

Correct Angle

Toe against the foot of the ladder

Ladderway Floor Openings

- Guard with a standard railing with toeboard 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

OSHA Office of Training and Education
Fixed Ladders

- Permanently attached to a structure, building or equipment
- Cages or wells are 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.
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, midrails and toeboards
- Use wire mesh between the toeboard 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
Thank you for your attention!
For further assistance contact your local printing trade association

Stay Safe!