



C O T T I N G H A M & B U T L E R

RISK MANAGEMENT SAFETY WEBINAR

DUTY TO HAVE FALL PROTECTION IN GENERAL INDUSTRY
AND THE CONSTRUCTION INDUSTRY



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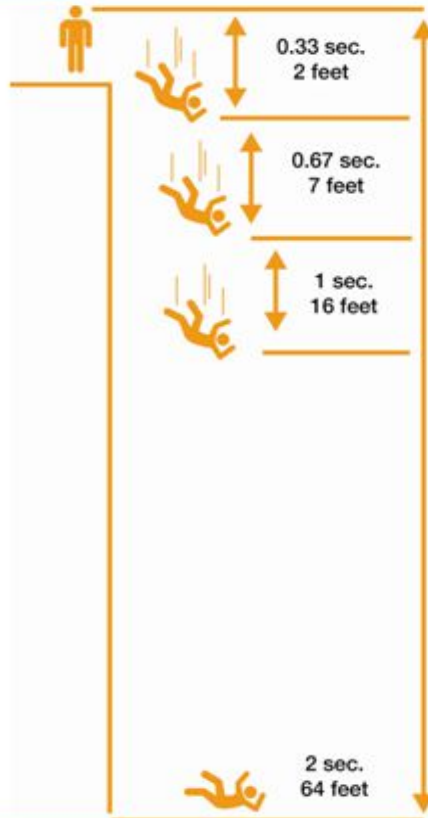
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FALLS ARE A KILLER

- Falls are leading cause of fatalities in construction and very high risk in general industry.
- 150-200 workers are killed each year
- More than 100,000 injured
- Overall falls are the 2nd biggest cause of fatalities in the U.S. (motor vehicle accidents are number one).

ANATOMY OF A FALL

Anatomy of a Fall



- **Perception distance:** It takes most people about $\frac{1}{3}$ of a second to become aware.
- **Reaction distance:** It takes another $\frac{1}{3}$ of a second for the body to react.
- **Fall distance:** A body can fall up to 7 feet in $\frac{2}{3}$ of a second.

WHAT DIFFERENT TYPES OF FALLS?

Same Level

When you fall to the surface you are walking on.

Caused by:

- Slips
- Trips



65% of all falls

From Elevation

When you fall to a level below the one you are walking on.

Caused by:

- Ladders
- Stairs
- Platforms
- Loading docks



COMMON HEIGHT INDICATORS

What is the minimum height or distance we need fall protection?

0"

What is the next height?

48" General Industry

What is the next height?

60" Shipyards

What is the next height?

72" Construction

What is the next height?

96" Long Shoring operations

DOES THAT ABOUT COVER IT?

Scaffolding

10'

Iron workers swinging steel

15' they must wear it

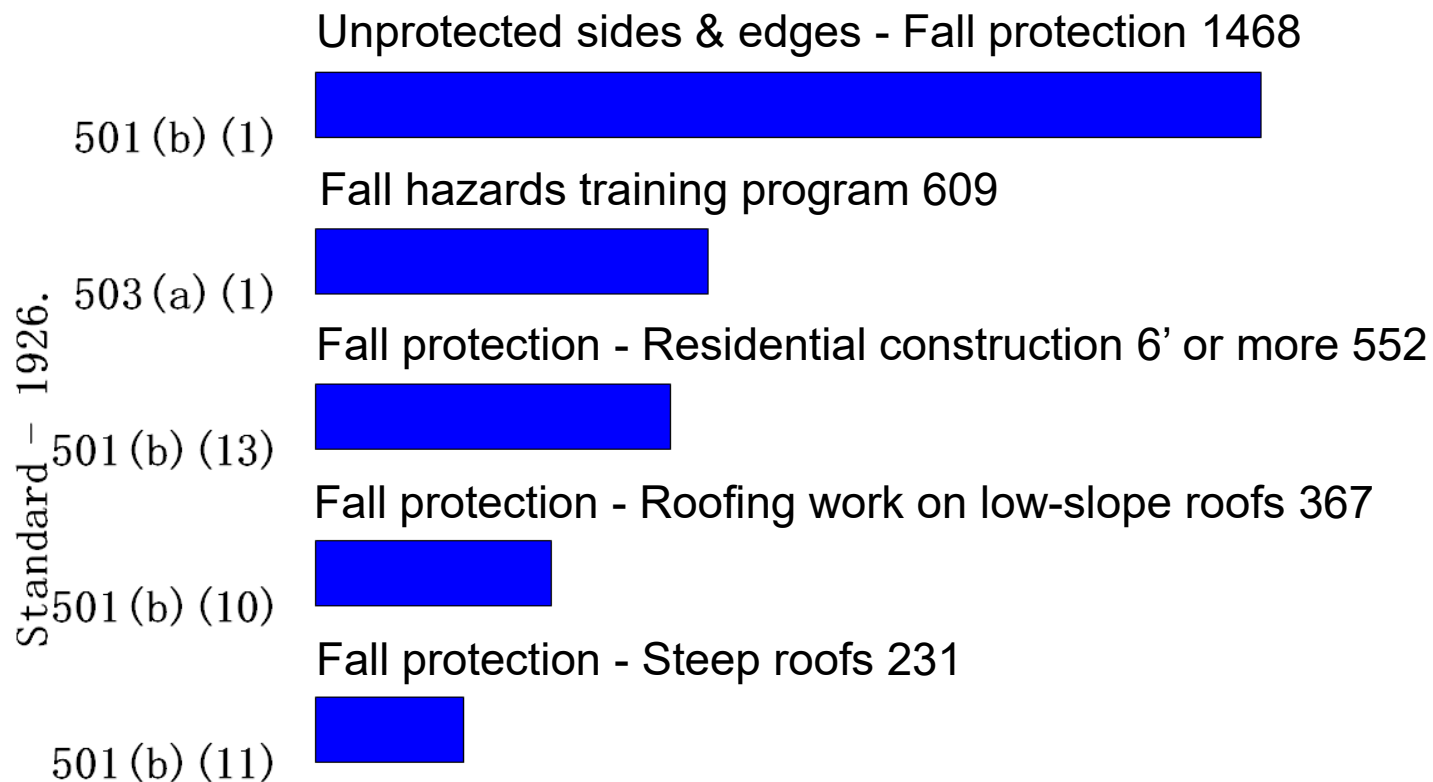
Iron workers installing decking

15' they must wear it and attach it

Iron workers swinging steel

30' they must attach it

MOST FREQUENTLY CITED, 1926



SUBPART M – FALL PROTECTION TRAINING

- Training
- Training program for employees
 - (a) nature of fall hazards
 - (b) procedures for erecting, maintaining, disassembling, and inspecting fall protection systems
 - (c) use and operation of guardrails, personal fall arrest, warning lines, safety monitors, and other protection
 - (d) fall protection plans
 - (e) standards in subpart
- Certification of training – designation of competent
- Retraining

SUBPART D, WALKING/WORKING SURFACES

- Revised (maintains some existing and introduces new) WWS requirements include:
- Definitions
- Guardrails
- Ladders
 - Portable
 - Fixed
- Stairs



SUBPART D

New Requirements include:

- Hazard assessment
- Inspections
- Fall protection
- Training

1910.21 SCOPE AND DEFINITIONS

OSHAs new definition terms include:

- Authorized
- Dangerous equipment
- Designated area
- Fall hazard
- Low-slope roof
- Personal fall arrest system
- Positioning system
- Qualified
- Stepladder and stepstool
- Travel restraint system
- Unprotected sides and edges
- Walking/working surfaces

1910.22 - GENERAL

For all WWS, employers must:

- Provide clean, orderly, dry, and sanitary conditions
- Maintain free of hazards
- Ensure loads can be supported
- Provide safe access and egress
- Conduct inspections, maintenance and repair

INSPECTIONS

Inspections must occur for all WWS

Regularly

- On a schedule, formal or informal, adequate enough to identify slip, trip and fall hazards in the workplace (must be conducted according to the frequency established by the employer).

As Necessary

- When workplace conditions, circumstances, or events occur that warrant an additional check in the workplace to ensure that WWS are safe for employee use

INSPECTIONS (CONT.)

If the result of any inspection identifies a hazardous condition. Action taken includes:

- Promptly correct or repair hazardous conditions.
- Guard or remove hazards if they cannot be repaired immediately.
- Utilize a qualified person to perform or supervise the maintenance or repair if it affects the structural integrity of the walking-working surface.

No records required, but is a best practice.

1910.23 - LADDERS

Types of ladders covered include:

- Portable
 - Extension
 - Step
 - Stepstool
 - Straight
 - Combination
 - Job-Made
- Fixed
- Mobile ladder stands
- Mobile ladder platforms

LADDERS: FALL PROTECTION

Required fall protection:

- Portable
 - None
- Mobile ladder stands
 - Handrails – 4 - 10 feet
 - Handrails, guardrails, and/or toe boards – above 10 feet
- Mobile ladder platforms
 - Handrails – 4 – 10 feet
 - Guardrails with toe boards – above 10 feet
- Fixed
 - Personal fall arrest system
 - Ladder safety system
 - Self closing gate

FIXED LADDER FALL PROTECTION

Fixed ladders 24 feet or more above a lower level must be equipped with:

- Cage*
- Well*
- Personal fall arrest system, or
- Ladder safety system



Installing personal fall arrest or ladder safety systems on new fixed ladders over 24 feet and on replacement ladders/ladder sections, including fixed ladders on outdoor advertising structures (2 years),

Ensuring existing fixed ladders over 24 feet, including those on outdoor advertising structures, are equipped with a cage, well, personal fall arrest system, or ladder safety system (2 years), and

Replacing cages and wells (used as fall protection) with ladder safety or personal fall arrest systems on all fixed ladders over 24 feet (20 years).

FIXED LADDER FALL PROTECTION (CONT.)

All fixed ladder platform openings must be equipped with an offset passage or a self-closing gate* that:

- Swings away from the hole and
- Includes a top rail and midrail



LADDER INSPECTIONS

All ladders – portable, mobile and fixed – must be inspected*:

- Before initial use on each work shift
- As necessary

**Defective*

LADDER INSPECTION

☐ STEP ☐ EXTENSION No. _____

**INSPECT UNIT CAREFULLY BEFORE
SIGNING INSPECTION RECORD**

YES NO

STEPS, RUNGS, UPRIGHTS & BRACES

☐	☐	LOOSE
☐	☐	LOOSE FASTENERS OR OTHER METAL PARTS
☐	☐	CRACKED, BROKEN, SPLIT OR WORN
☐	☐	SLIVERED
☐	☐	DAMAGED/WORN NON-SLIP BASES

HINGES

☐	☐	LOOSE HINGE
☐	☐	LOOSE/BENT SPREADER
☐	☐	SPREADER STOP BROKEN

LOCKS & ROPE

☐	☐	LOOSE, BROKEN OR MISSING LOCK
☐	☐	IMPROPERLY SEATED WHEN EXTENDED
☐	☐	WORN OR ROTTED ROPE

GENERAL

☐	☐	WOBBLY
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SEE OTHER SIDE

LADDER USE

When going up and down ladders, you must make sure employees:

- Face the ladder,
- Use at least one hand to firmly grasp the ladder, and
- Not carry any object or load that could cause them to lose balance and fall.



1910.25 STAIRWAYS

All stairways must have:

- Overhead clearance of 6'8"
- Fall protection per 1910.28(b)(11)
 - Stair rail systems
 - Guardrails and/or
 - Handrails
- Landing platforms if door opens directly onto a stairway

1910.28 DUTY TO HAVE FALL PROTECTION

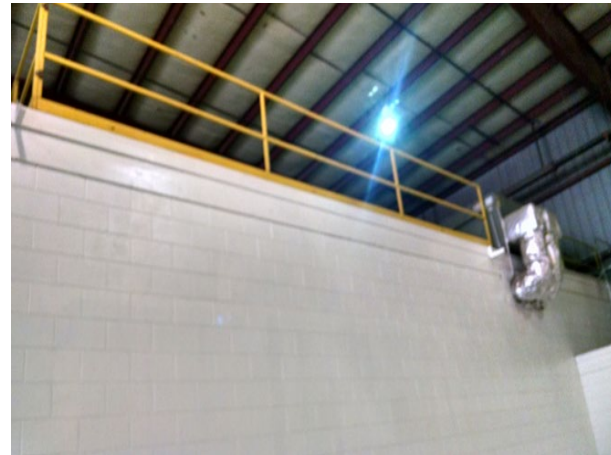
Employers must provide protection for each employee exposed to:

- Falls
 - Unprotected
 - Hoist Areas
 - Holes and openings**
 - Runways
 - Dockboards
 - Dangerous equipment
 - Service and repair pits
 - Fixed ladders
 - Billboards
 - Stairways
 - Scaffold and rope descent systems
 - Low-slope roofs
 - Slaughter facility platforms
- Falling objects

DUTY TO HAVE FALL PROTECTION

Unprotected sides and edges. The employer must ensure that each employee on a walking-working surface with an unprotected side or edge that is 4 feet (1.2 m) or more above a lower level is protected from falling

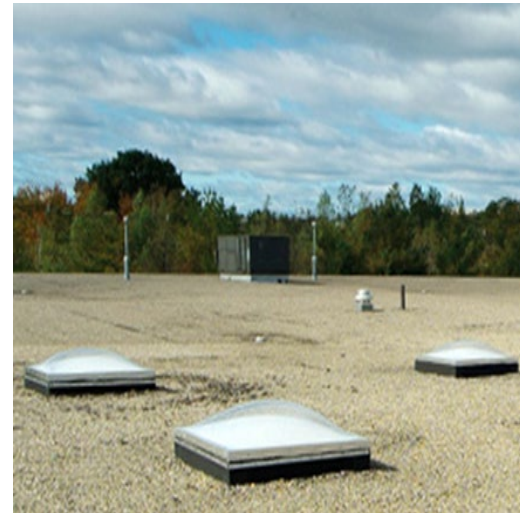
- (A) Guardrail systems;
- (B) Safety net systems; or
- (C) Personal fall protection systems, such as personal fall arrest, travel restraint, or positioning systems.



HOLES - 1910.28 (B)(3)

(3) The employer must ensure: (i) Each employee is protected from falling through any hole (including skylights) that is 4 feet (1.2 m) or more above a lower level by one or more of the following:

- (A) Covers;
- (B) Guardrail systems;
- (C) Travel restraint systems; or
- (D) Personal fall arrest systems.



HOLES - 1910.28 (B)(3)(II)

Each employee is protected from tripping into or stepping into or through any hole that is less than 4 feet (1.2 m) above a lower level by covers or guardrail systems



HOLES - 1910.28 (B)(3)(IV)

Each employee is protected from falling into a ladderway floor hole or ladderway platform hole by a guardrail system and toeboards erected on all exposed sides, except at the entrance to the hole, where a self-closing gate or an offset must be used.



1910.29 FALL PROTECTION SYSTEMS

Fall protection options include:

- Guardrail systems
- Covers
- Handrails and stair rail systems
- Ladder safety systems (*new*)
- Safety net systems (*new*)
- Designed area (*new*)
- Personal fall protection (*new*)

GUARDRAIL SYSTEMS

The employer must ensure guardrail systems meet the following requirements:

The top edge height of top rails, or equivalent guardrail system members, are 42 inches (107 cm), plus or minus 3 inches (8 cm), above the walking-working surface.

- Top rails 42" +/- 3"
 - Must withstand 200 pounds
- Mid rails halfway
 - Must withstand 150 pounds
- Toe Boards at bottom, no more than 1/4"
 - Must withstand 50 pounds
- Surface the guardrail to prevent punctures, lacerations and the snagging of clothing
- No steel or plastic banding

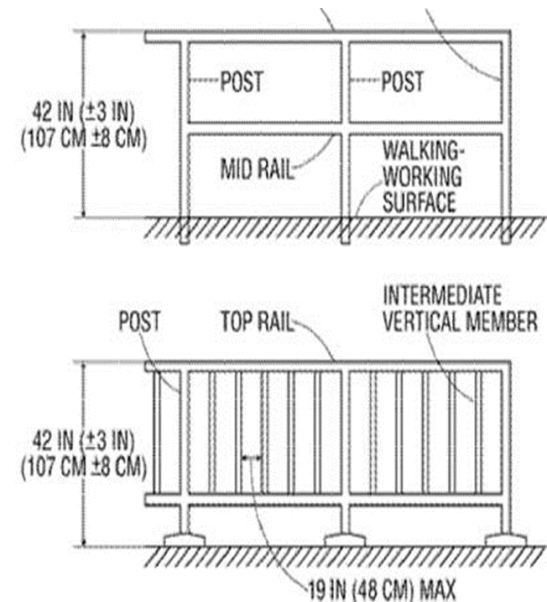
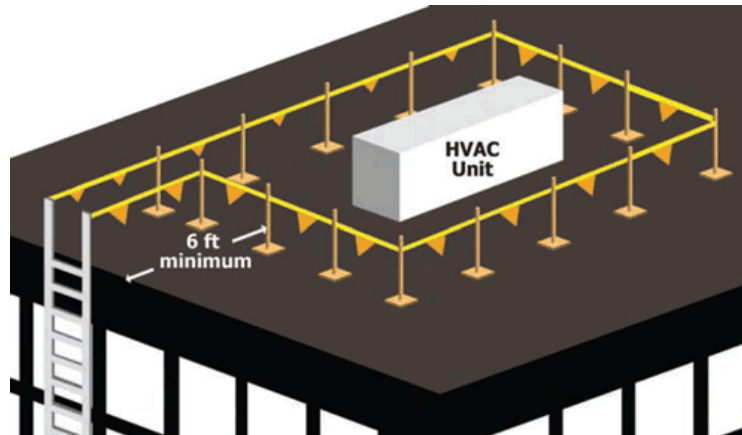


Figure D-10 – Guard Rail Systems

DESIGNATED AREAS

A designated area can only be used on low-slope roofs when work is:

- Temporary and infrequent – 6 to 15 feet from the roofs edge.
- Permanent – 15 feet or more from the roofs edge ONLY



DESIGNATED AREAS (CONT.)

Designated areas must be delineated with a warning line* that consists of a rope, wire, tape or chain that is:

- Close to the work area as possible
- Minimum breaking strength of 200 lbs
- 34-39 inches at its lowest point
- Clearly visible from 25 ft away



PERSONAL FALL PROTECTION

Personal fall protection now includes:

- Personal fall arrest* - Used to arrest workers from falling to a lower level when a fall occurs.
- Travel restraint – Used to limit a workers travel to prevent exposure to a fall hazard.
- Positioning devices – used to support a worker in a fixed position.

1910.30 TRAINING

Employers must train employees on the fall protection systems and equipment they use under Subpart D, including:

- Personal fall protection
- Safety nets
- Ladder safety systems
- Portable guardrails
- Dockboards
- Designated areas
- Ladders
- Scaffolds

TRAINING (CONT.)

The employee must be able to:

- Recognize fall hazards,
- Minimize these fall hazards, and
- Correctly install, set-up, inspect, operate/use, maintain, disassemble, and/or store fall protection systems and equipment.
- Ensuring **exposed workers are trained on fall hazards (6 months)**,
- Ensuring workers who use equipment covered by the final rule are trained (6 months),

TRAINING (CONT.)

Training may be delivered using different formats (e.g., video) and technology (e.g., online) provided that:

1. Its delivered in a manner each worker understands, and
2. A qualified person* developed or prepared the training.

TRAINING: TRAINER REQUIREMENTS

The trainer (qualified person) must have a degree, certificate or professional standing OR extensive knowledge, training, and experience to solve or resolve problems relating to:

- The subject matter (e.g., how to use personal fall protection, designated areas, ladder safety system, etc.),
- The work (e.g. working on a roof), or
- The project

TRAINING: RETRAINING

Employers must retrain employees when:

- Changes in the workplace render previous training invalid
- Changes in the types of fall protection systems or equipment render previous training invalid, or
- The employee demonstrates a lack of understanding or skill necessary to use equipment or perform the job safely

DUTY TO HAVE FALL PROTECTION 1926.501

- Be designed so an employee can neither free fall more than 6 feet, nor contact any lower levels.
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to a few feet .
- And, have sufficient strength to withstand twice the potential impact energy of an employee free-falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

WHAT IS A “COMPETENT PERSON?”

Capable of identifying

- Existing and predictable hazards
- Unsanitary, hazardous, dangerous conditions

Authorized to take corrective measures

- Planning
- Fit & components
- Hazard recognition/Risk assessment
- Inspections
- Rescue

WHAT IS A “COMPETENT PERSON?” (CONT.)

Can a Competent Person be liable in a workplace fall related injury or death?

- The answer is yes, if the Competent Person is negligent.
- Negligence has to do with knowing what must be done and then not doing it

FALL PROTECTION PLAN

- Site specific
- Prepared by a **qualified person**
- Copy maintained at jobsite
- Document why conventional fall protection is not feasible
- Written measures to be taken to reduce fall hazards to employees
- Identify locations
- Identify workers designated to work in locations or areas

PLANNING

Sometimes it takes a lot of work to do things wrong.

Elimination of fall hazards using the hierarchy of controls should be performed by all companies.



ASSESSING RISK



ASSESSING RISK



FOR MORE INFORMATION...

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Fall Protection



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[Protecting Workers from Falls](#)

[Additional Resources](#)

Overview

OSHA has developed this webpage to provide workers and employers useful, up-to-date information on fall protection.

Why is fall protection important?

Falls are among the most common causes of serious work related injuries and deaths. Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls.

What can be done to reduce falls?

Employers must set up the work place to prevent employees from falling off of overhead platforms, elevated work stations or into holes in the floor and walls. OSHA requires that fall protection be provided at elevations of four feet in general industry workplaces, five feet in shipyards, six feet in the construction industry and eight feet in longshoring operations. In addition, OSHA requires that fall protection be provided when working over dangerous equipment and machinery, regardless of the fall distance.

To prevent employees from being injured from falls, employers must:

- Guard every floor hole into which a worker can accidentally walk (using a railing and toe-board or a floor hole cover).
- Provide a guard rail and toe-board around every elevated open sided platform, floor or runway.
- Regardless of height, if a worker can fall into or onto dangerous machines or equipment

National Safety Stand-Down
[Find Out More!](#)



**Preventing Falls in Construction**
[In Spanish](#)

Highlights

- [Engulfment in a Sugar Hopper.](#)
OSHA Fatal Facts No. 10, (2015).
- [Protecting Roofing Workers.](#)
OSHA Publication 3755, (2015).
- [Fall Protection in Construction.](#)

THANK YOU

QUESTIONS?