

**Subparts D and I  
Walking-Working Surfaces &  
Personal Protective Equipment  
Final Rule**



# OSHA's Mission

- To Assure So Far as Possible Every Working Man and Woman in the Nation Safe and Healthful Working Conditions...
- Standards are Updated



# New Rules of Subpart D and I

- To update the outdated subpart D standard, incorporating new technology and industry practices
- To increase consistency with OSHA's construction standards (CFR 1926 subparts L, M, and X)
- To add new provisions to subpart I that set forth criteria requirements for personal fall protection equipment



# Major Changes

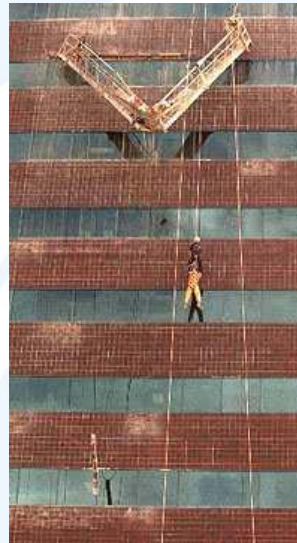
- Fall Protection Flexibility
- Updated Scaffold Requirements
- Phase-in of ladder safety systems or personal fall arrest systems on fixed ladders
- Phase-out of “qualified climbers” on outdoor advertising structures
- Rope descent systems

# Major Changes

- Adds requirements for personal fall protection equipment (final §1910.140)
- Adds training requirements



**Travel Restraint**



**Personal Fall Arrest**



Work Positioning  
**OSHA**<sup>®</sup>

# Benefits

- According to BLS data, slips, trips, and falls are a leading cause of workplace fatalities and injuries in general industry
- OSHA estimates the new rule will prevent 29 fatalities and 5,842 injuries annually
- Net benefits - \$309.5 million/year  
(Monetized benefits – annual costs)



# Subpart D

## Existing rule

- 1910.21 Definitions.
- 1910.22 General requirements.
- 1910.23 Guarding floor and wall openings and holes.
- 1910.24 Fixed industrial stairs.
- 1910.25 Portable wood ladders.
- 1910.26 Portable metal ladders.
- 1910.27 Fixed ladders.
- 1910.28 Safety requirements for scaffolding.
- 1910.29 Manually propelled mobile ladder stands and scaffolds. (towers).
- 1910.30 Other working surfaces. requirements.

## Final rule

- 1910.21 Scope, application, and definitions.
- 1910.22 General requirements.
- 1910.23 Ladders.
- 1910.24 Step bolts and manhole steps.
- 1910.25 Stairways.
- 1910.26 Dockboards (bridge plates).
- 1910.27 Scaffolds (including rope descent systems).
- 1910.28 Duty to have fall protection.
- 1910.29 Fall protection systems criteria and practices
- 1910.30 Training .

# Subpart I - PPE

- Addition of :
- 1910.140 – Fall Protection System
- Appendix C - Personal Fall Protection Systems - non-mandatory
- Appendix D – Test Method and Procedures for Personal Fall Protection Systems – non-mandatory



# 1910.21 - Scope and Definitions

- Consolidates definitions into one section
- Adds new definitions to provide clarity
- Applies to all general industry workplaces
  - Some exceptions

# 1910.21 - Scope and Definitions

- Applies to all general industry workplaces
  - Some exceptions
- Walking-working surface - means any surface, horizontal or vertical, on or through which an employee walks, works, or gains access to a workplace location. Walking-working surfaces include, but are not limited to, floors, stairs, steps, roofs, ladders, ramps, runways, aisles, and step bolts.



# 1910.22 - General Requirements

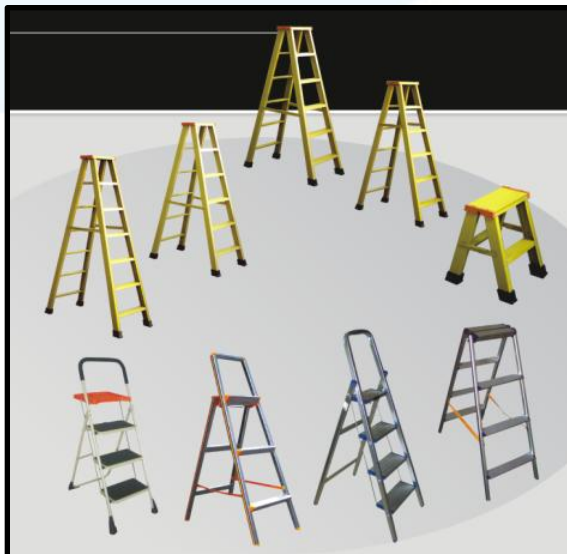
- Maintains housekeeping provisions
- Walking-working surfaces must be designed to meet their maximum intended load, free of recognized hazards, and routinely inspected
- Safe means of access and egress
- Repairs to be done, or overseen, by competent person

# 1910.23 - Ladders

- Consolidates and simplifies rules into general requirements, portable ladders, fixed ladders, and mobile ladder stands
- Requires inspection before use



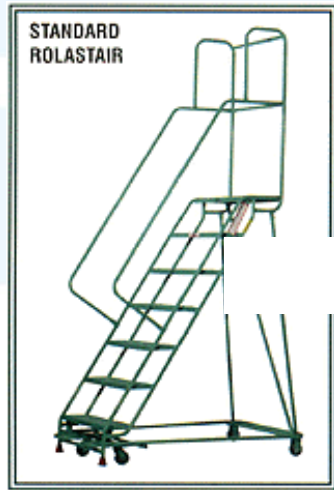
Fixed ladders



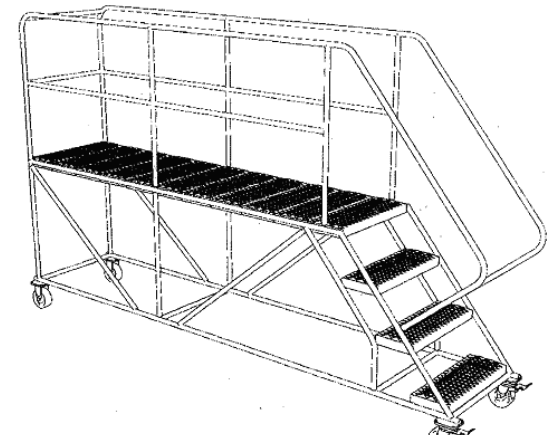
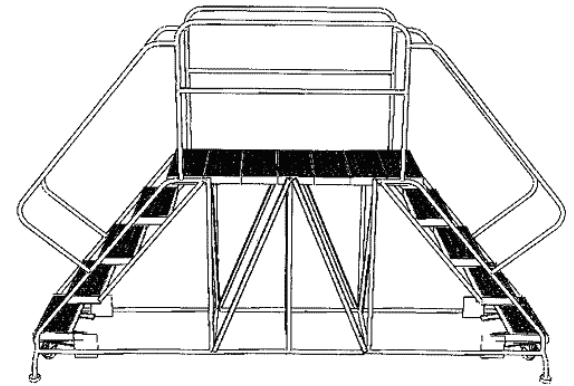
Portable  
Ladders and Step  
Stools

# 1910.23 - Ladders

- Updates and makes rule consistent with current national consensus standards



Mobile Ladder Stand



Mobile Ladder Stand Platform

# 1910.23 Ladders

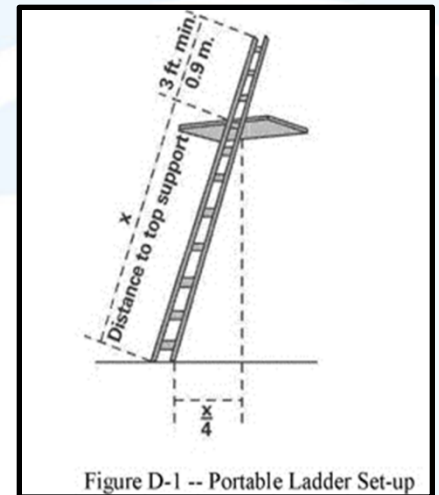
- Requirements common to all types of ladders are located in paragraph (b), General Requirements.
- This section has more specifications than the rest of the standard, e.g. rung distance, including stepstools.
- Exceptions for firefighting/rescue operations and integral part of machine or equipment. Other allowances in specific requirements.
  - No paint or coatings on wood ladders.
  - Safe work practices

# 1910.23 Ladders

- Paragraph (c) sets specific, additional requirements for portable ladders.
  - No longer address special-purpose ladders, such as painter's ladder.
  - Uses performance-oriented language, where possible.
  - Prohibits use of single-rail ladders.
  - Not moved, shifted or extended while occupied.

# 1910.23 Ladders

- Paragraph (c) sets specific, additional requirements for portable ladders.
  - After-market ladder extensions may be used to extend ladders as long as top rung is at or slightly below landing surface, designed for purpose and secure.





# 1910.23 Ladders

- Paragraph (d) sets specific, additional requirements for fixed ladders
  - To assist in compliance figures D-2 through D-5 are included in regulatory text
  - Fixed ladders must be capable of supporting their maximum intended load.
  - Fixed ladders installed must be designed, constructed, and maintained as follows:

# 1910.23 Ladders

- Ladder capable of supporting two live loads
- Rungs capable of supporting two live loads
- Minimum perpendicular clearances
- Ladder extensions
- Hatches
- Cages and wells

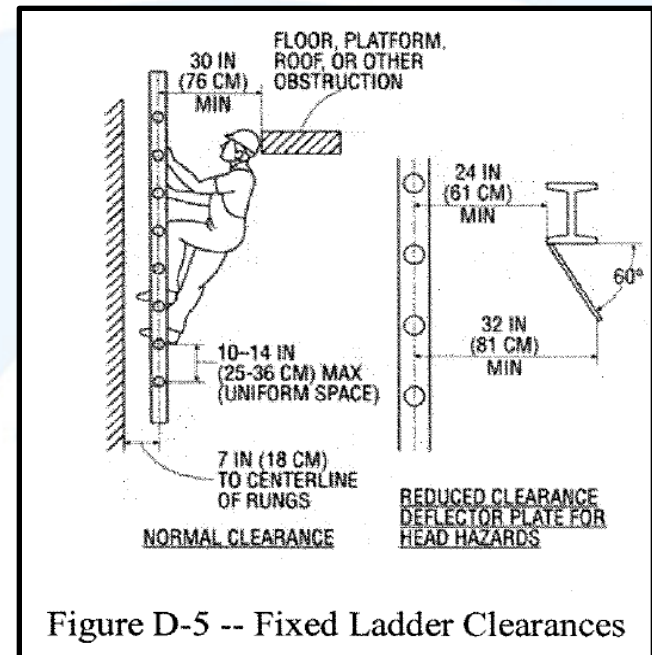


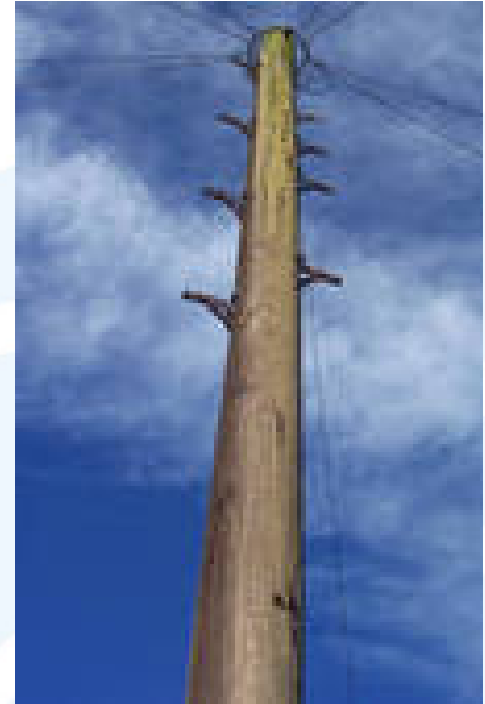
Figure D-5 -- Fixed Ladder Clearances

# 1910.23 Ladders

- Mobile ladder stands and mobile ladder stand platforms
  - General design requirements
  - Design requirements for mobile ladder stands.
  - Design requirements for mobile ladder stand platforms.
    - Base to height requirements
    - Handrail/toe board requirements

# 1910.24 - Stepbolts & Manhole Steps

- Moves stepbolt criteria from OSHA's Telecommunication Standard to Walking-Working Surfaces
- Makes design, inspection, and maintenance requirements consistent with national consensus standards



Step bolts on pole

# 1910.25 - Stairways

- Adds design and use criteria for spiral stairs, ship stairs, and alternating tread-type stairs
- Updates design criteria for stairs and landings, consistent with national consensus standards

# 1910.25 Stairways

- Uses term "standard stairs" instead of "fixed industrial stairs."
- The scope generally covers all stairs, including standard stairs, spiral stairs, ship stairs, and alternating tread-type stairs
- Additional requirements for stairs serving as required exit routes are located in subpart E, Means of Egress.

# 1910.25 Stairways

- Vertical clearance - at least 6 feet, 8 inches
- Uniform riser heights and tread depths between landings.
- Stairway landings and platforms must be no less than the width of the stair and not less than 30 inches in length as measured in the direction of travel.

# 1910.25 Stairways

- Designed and constructed to carry five times the normal anticipated live load, but never less than a concentrated load of 1,000 pounds applied at any point.
- Spiral stairs, ship stairs, or alternating tread-type stairs are not permitted except for special limited usage and secondary access.



# 1910.25 Stairways

- Additional requirements:
- Standard stairs must be:
  - installed at angles between 30 and 50 degrees from the horizontal;
  - have a maximum riser height of 9.5 inches
  - have a minimum tread depth of 9.5 inches, except when open risers are used; and
  - have a minimum width of 22 inches (56 cm) between vertical barriers.

# 1910.25 Stairways

- There are also additional requirements for:
  - Spiral Stairways
  - Ship Stairs
  - Alternating tread-type stairs.

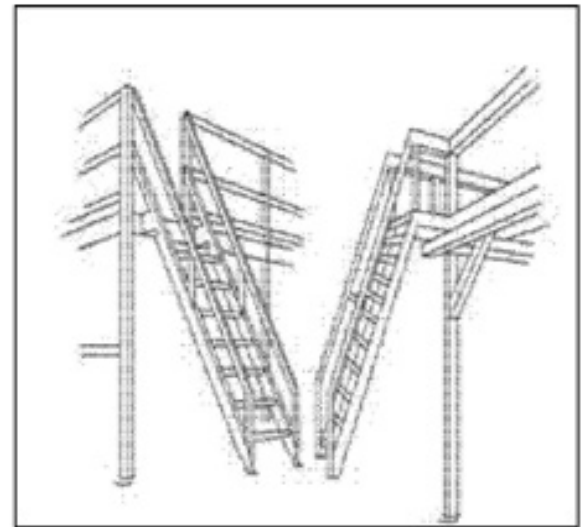
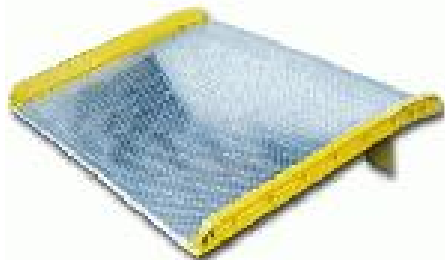


Figure D-9 -- Ship Stairs

# §1910.26 - Dockboards

- Updates requirements for dockboards
- Adds design and construction requirements to prevent equipment from going over the dockboard edge



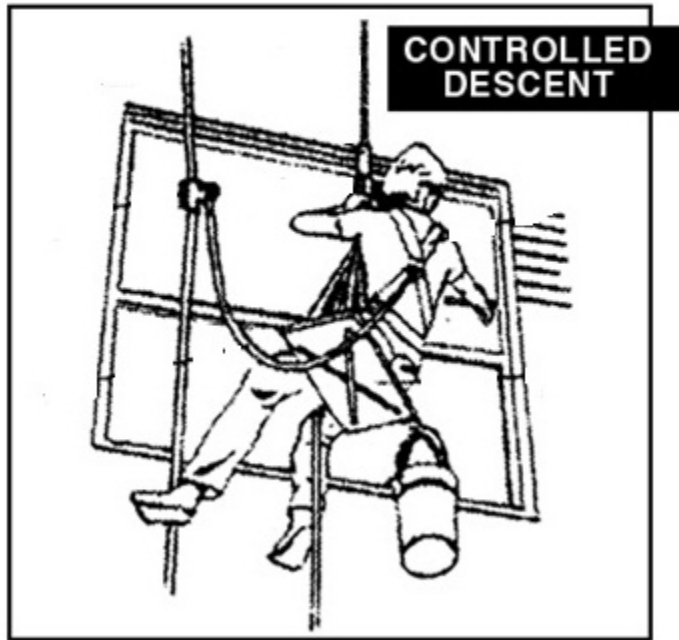
# 1910.27 - Scaffolds and Rope Descent Systems (RDS)

- Requires that employers using scaffolds follow the construction standard
- Adds provision allowing use of RDS, which codifies a 1991 OSHA memo allowing RDS
- Requires certification of anchorages starting 1 year after final rule published
- Requires RDS have separate fall arrest system



# Rope Descent Systems

ROPE DESCENT SYSTEM (RDS)



# 1910.27 RDS

- Rope Descent Systems.
  - Rope descent system means a suspension device that supports one employee in a chair (seat board) and allows the user to descend in a controlled manner and to stop at any time at a desired level of descent. A rope descent system is a variation of the single-point adjustable suspension scaffold. Also known as a controlled descent device, controlled descent equipment, or controlled descent apparatus.
  - prohibited for heights greater than 300' above grade unless the employer can demonstrate that access cannot otherwise be attained safely and practicably.

# 1910.27 RDS

- Use equipment in accordance with the instructions, warnings, and design limitations set by manufacturers and distributors.
- Train employees
- Inspect all equipment used in rope descent systems each day before use and remove damaged equipment from service
- Use a separate, independent personal fall arrest system
- Provide for prompt rescue
- Secure tools



# 1910.28 - Duty To Have Fall Protection and Falling Object Protection

- Consolidates general industry fall protection requirements into one section
- Makes requirements and format consistent with construction standard
- Incorporates new technology that is consistent with national consensus standards
- Gives employers flexibility to use the system that works best to protect workers in their situation





# 1910.28 Duty to Have Fall Protection

- The employer must ensure that the walking-working surfaces used by its employees have the strength and structural integrity to support them safely, before allowing employees to work on those surfaces.
- Protection from falling objects.
  - Hardhats, toeboards, canopies, barricade areas

# 1910.28 Duty to Have Fall Protection

- Unprotected sides and edges.
  - 4 feet or more above a lower level
  - Guardrail
  - Designated area
  - Safety net systems
  - Travel restraint
  - Personal fall arrest systems
  - When the employer demonstrates that use of guardrails on the "working side" of platforms is infeasible.



# 1910.28 Duty to Have Fall Protection

- Holes - Including skylights
  - 4 feet or more above a lower level
  - Covers – falling through, tripping, struck by objects
  - Guardrail
  - Travel restraint
  - Personal fall arrest systems

# 1910.28 Duty to Have Fall Protection

- Dangerous equipment.
  - Less than 4 feet or more above dangerous equipment must be protected by a guardrail or a travel restraint system unless the equipment is covered or guarded to eliminate the hazard.
  - 4 feet or more above dangerous equipment must be protected from fall hazards by a guardrail, safety net systems, travel restraint or personal fall arrest systems

# 1910.28 Duty to Have Fall Protection

- Openings.
  - For employees working on, at, above, or near where the outside bottom edge of the wall opening is 4 feet or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking-working surface
  - Guardrail
  - Designated area
  - Safety net systems

# 1910.28 Duty to Have Fall Protection

- For fixed ladders that extend more than 24 feet above a lower level, the employer must have a
  - Ladder safety system
  - Personal fall protection system
  - Cage or well
    - Existing
    - New
    - Replacement
    - Final Deadline`



# 1910.28 Duty to Have Fall Protection

- Stairways.
  - 4 feet or more to lower levels from an unprotected side or edge of a stairway landing must be protected by a guardrail or stair rail system.
  - Every flight of stairs having 3 treads and 4 or more risers must be equipped with stair railing systems and hand rails as in table
  - Ship stairs or alternating tread type stairs are installed, they must be equipped with handrails on both sides.



# 1910.28 Duty to Have Fall Protection

- Scaffolds.
  - Part 1926
  - Rope descent system
    - 4 feet or more above a lower level
    - Personal fall arrest systems
- Walking-working surfaces not otherwise addressed.
  - 4 feet or more above a lower level
  - All choices of systems





# 1910.29 - Fall Protection Systems Criteria

Specifies design and installation requirements of each fall protection system available to employers including:

- Guardrails
- Stair rails
- Designated areas
- Safety nets
- Cages and wells
- Ladder safety systems
- Toeboards
- Covers



# 1910.30 - Training

- Adds training and retraining requirements addressing fall hazards and equipment hazards
- Requires employers make training understandable to workers

# §1910.140

## §1910.140 – Personal Protective Equipment (Personal Fall Protection Systems)

- Adds definitions for personal fall protection systems
- Adds new section on system and use criteria for:
  - Personal fall protection equipment (e.g., lanyards, ropes, D-rings, harnesses)
  - Personal fall arrest systems
  - Travel restraint systems
  - Work positioning systems



# Walking - Working Surfaces

- The final rule becomes effective on Jan. 17, 2017.
- Training workers on fall and equipment hazards -- 6 months;
- Inspection and certification of permanent building anchorages -- 1 year;
- Installation of fall protection (personal fall arrest systems, ladder safety systems, cages, wells) on existing fixed ladders (over 24 feet) that do not have any fall protection -- 2 years;
- Installation of ladder safety or personal fall arrest systems on new fixed ladders (over 24 feet) and replacement ladders/ladder sections -- 2 years;
- Installation of ladder safety systems or personal fall arrest systems on all fixed ladders (over 24 feet) – 20 years.

# Compliance Assistance Resources

- OSHA's new webpage on subparts D&I:  
<https://www.osha.gov/walking-working-surfaces/index.html>
- Fact sheets
- FAQs
- Suggestions?