

# Walking-Working Surfaces and Fall Protection Rule



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# Purpose of the New Rule

- To update the outdated subpart D (Walking Working Surfaces) standard, incorporating new technology and industry practices
- To increase consistency with OSHA's construction standards (CFR 1926 subparts L (Scaffolds), M (Fall Protection), and X (Stairways and Ladders))
- To add new provisions to subpart I (PPE), that set forth criteria requirements for personal fall protection equipment (§1910.140)

# What and Who Does the Final Rule Cover?

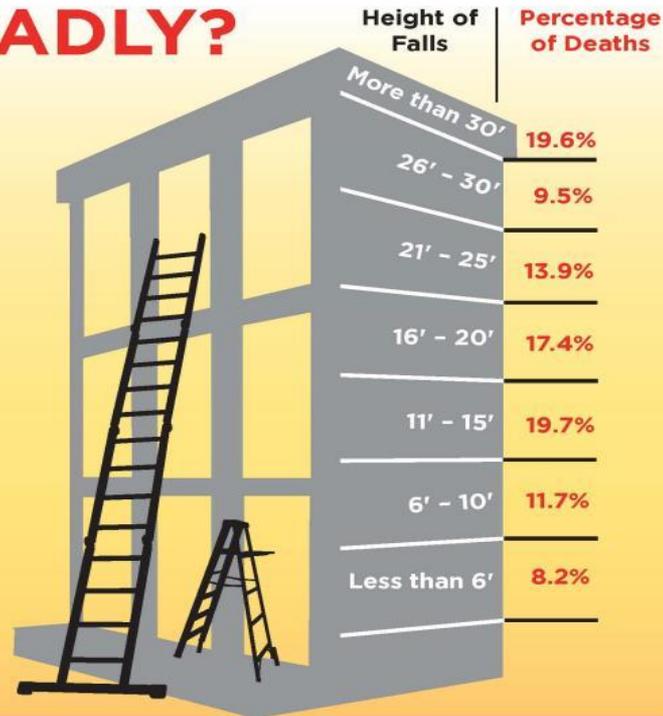
- Applies to all general industry workplaces
- Covers all walking-working surfaces, which include horizontal and vertical surfaces such as:
  - Floors                      Stairs                      Roofs                      Ladders,
  - Ramps                      Scaffolds                      Elevated walkways
  - and Fall protection systems
- Covers a wide variety of general industry firms including:
  - Building management services                      Utilities,
  - Warehousing                      Retail                      Window cleaning
  - Chimney sweeping, and Outdoor advertising

# The Problem

## How High is **DEADLY?**

You may not be very high off the ground but if you fall, it could be deadly.

**PROTECT** your employees, your co-workers, yourself.



**Join the Campaign to Stop Construction Falls!**

[www.stopconstructionfalls.com](http://www.stopconstructionfalls.com)



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**PLAN. PROVIDE. TRAIN.**  
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Source: These numbers were calculated by the authors with restricted access to BLS CFOI microdata. The views expressed here do not necessarily reflect the views of the BLS.

# Organization of Subpart D

§1910.21 – Scope, Application  
and Definitions

§1910.22 – General  
Requirements

§1910.23 – Ladders

§1910.24 – Stepbolts and  
Manhole Steps

§1910.25 – Stairways

§1910.26 – Dockboards

§1910.27 – Scaffolds and  
Rope Descent  
Systems

§1910.28 – Duty to Have Fall  
Protection

§1910.29 – Fall Protection  
Systems Criteria  
and Practices

§1910.30 – Training  
Requirements

# The Old and the New Subpart D

Final Subpart D	Existing Subpart D
§1910.21 Scope and definitions.	§1910.21 Definitions.
§1910.22 General requirements.	§1910.22 General requirements.
§1910.23 Ladders.	§1910.23 Guarding floor and wall openings and holes.
§1910.24 Step bolts and manhole steps.	§1910.24 Fixed industrial stairs.
§1910.25 Stairways.	§1910.25 Portable wood ladders.
§1910.26 Dockboards.	§1910.26 Portable metal ladders.
§1910.27 Scaffolds and rope descent systems.	§1910.27 Fixed ladders.
§1910.28 Duty to have fall protection and falling object protection.	§1910.28 Safety requirements for scaffolding.
§1910.29 Fall protection systems and falling object protection—criteria and practices.	§1910.29 Manually propelled mobile ladder stands and scaffolds (towers).
§1910.30 Training requirements.	§1910.30 Other working surfaces.

# §1910.21 - Some New Definitions

- **Anchorage** – Secure point of attachment for equipment
- **Dangerous Equipment** – Causes harm if an employee falls into or onto it
- **Low-Slope Roof** – Slope less than or equal to a ratio of 4 in 12 (vertical to horizontal)

All these terms are consistent with terms found in the Construction Industry standards.

# §1910.21 - Some New Definitions

- Personal Fall Arrest System
- Personal Fall Protection System
- Positioning System (work positioning system)
- Stairway (Stairs)
- Travel Restraint System
- Warning Line

All these terms are consistent with terms found in the Construction Industry standards.

# Definitions to Consider

**Qualified** – Describes a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

**Competent Person** – Means a person who is capable of identifying existing and predictable hazards in any personal fall protection system or any component of it, as well as in their application and uses with related equipment, and who has the authorization to take prompt, corrective action to eliminate the identified hazards.

- A qualified person with education or technical expertise prevents or eliminates hazards through planning and design.
- A competent person has demonstrated abilities by virtue of experience and training; is designated as a person with authority to promptly prevent or eliminate hazards.

# §1910.22 – General Requirements

- Paragraph (a) Surface Conditions - Maintains old housekeeping provisions; now is added,
- Paragraph (b) - Walking-working surfaces must be designed to meet their maximum intended load, free of recognized hazards, and routinely inspected
- Paragraph (c) – Safe access and egress to and from walking-working surfaces

# §1910.22

- Paragraph (d) - Inspection of walking-working surfaces
  - The final rule requires that employers inspect walking-working surfaces regularly and as needed and correct, repair, or guard against hazardous conditions
  - Repairs to be done, or overseen, by qualified person

# §1910.23 - Ladders

- Consolidates and simplifies rules into general requirements for all ladders, then for,
- Categories of portable ladders, fixed ladders, and mobile ladder stands
- Requires inspection before use



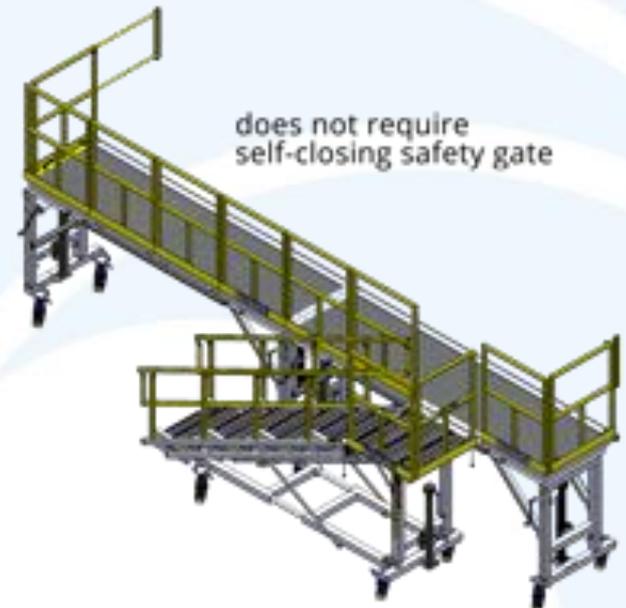
Fixed Ladders



Portable  
Ladders and Step Stools

# 1910.23 Platforms

- Stairs must be at least 16" wide, 7" deep, and have no more than 10" of rise between them
- Self closing gate
- 42" Guardrail if over 4 ft. tall
- Platform's height cannot exceed 4x its base width
- Tested to 4x its rated capacity



# §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



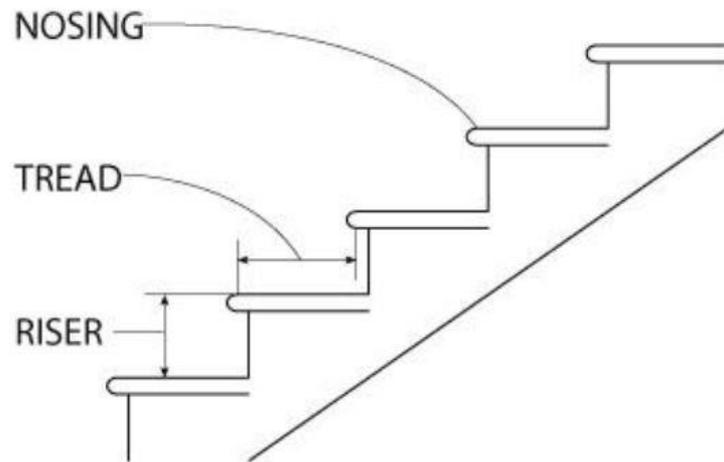
Step bolts on pole

# §1910.25 - Stairways

- Handrails, stair rail systems, and guardrail systems must be provided; requirements are found in §1910.28
- Spiral, ship, or alternating tread-type stairs are used only when the employer demonstrates it is not feasible to provide standard stairs



# Standard Stairs



MINIMUM TREAD WIDTH 22 IN (56 CM)  
MINIMUM TREAD DEPTH 9.5 IN (24 CM)  
MAXIMUM RISER HEIGHT 9.5 IN (24 CM)

- Slope between 30 and 50 degrees
- Handrails between 30 and 37 inches
- Existing stair rail systems must be at least 30 inches
- New stair rail systems: 42 inches (after 1-17-17)

# §1910.26



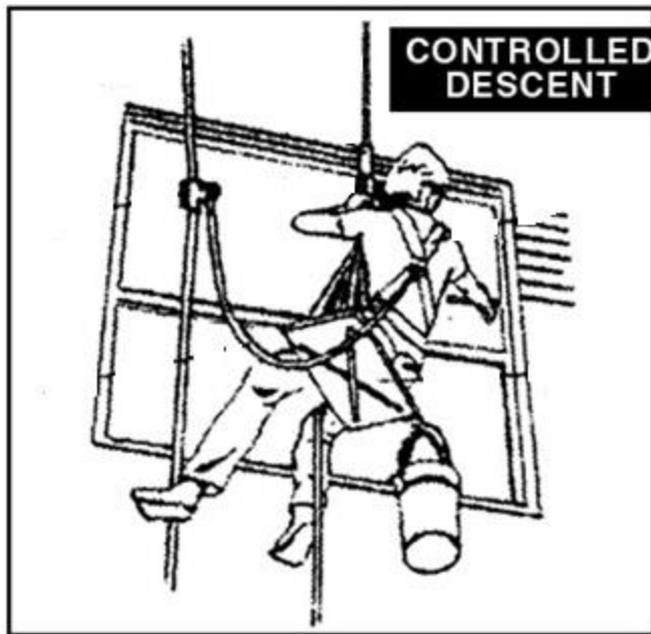
## §1910.26 – Dockboards

- Dockboards put into service after January 1, 2017, must be designed, constructed, and maintained to prevent transfer vehicles from running off the dockboard edge - if a transport vehicle can run off the edge
- Must have measures to secure portable dockboards
- Wheel chocks, sand shoes etc. must anchor vehicle to prevent movement
- Portable dockboards must be equipped with handholds or other means to permit safe handling



# Rope Descent Systems (RDS)

## ROPE DESCENT SYSTEM (RDS)



NOTE: A rope descent system is a limited type of industrial rope system. It can only move vertically downward. The RDS also has a seat board or chair unlike an industrial rope system that has a sit harness.

# §1910.27 - Rope Descent System (RDS)

- Rope Descent System (RDS) - a suspension system that allows a worker to descend in a controlled manner and, as needed, stop at any point during the descent to perform work
- Usually Contains
  - a roof anchorage, support rope, descent device, carabiners or shackles, and chair (seatboard) but,
  - **does not include industrial rope access systems. (Unlike RDS, industrial rope systems can travel up and down)**

# §1910.27 – More about RDS

## Rope descent systems (RDS) and certification of anchorages (§1910.27(b))

- Codifies OSHA's memorandum for employers who use RDS to perform elevated work
  - Prohibits employers from using RDS at **heights greater than 300 feet above grade**
    - unless they demonstrate it is not feasible or creates a greater hazard to use any other system
  - Requires building owners to provide **and** employers to obtain
    - information that permanent **anchorages** used with RDS have **been inspected, tested, certified, and maintained** as capable of supporting at least **5,000 pounds per employee attached**

# Requirements for the Use of Rope Descent Systems (RDS)

- Used in accordance with manufacturer's instructions, warnings and design limitations or under the direction of a qualified person;
- Inspected before initial use during a work shift;
- Proper rigging, including anchorages and tiebacks;
- A separate and independent personal fall arrest system;

# Requirements for the Use of Rope Descent Systems (RDS)

- Has components that are all capable of sustaining 5,000-pound minimum rated load (except seatboards, which must be able to support 300 pounds);
- Has ropes that are protected to prevent cuts and weakening and exposure to open flames, hot work, corrosive chemicals and destructive conditions;
- Has stabilization when descents are greater than 130 feet; and
- Is not used when hazardous weather conditions are present.

# Requirements for the Use of Rope Descent Systems (RDS)

- Some Requirements for Employers:
  - Ensure each worker who uses an RDS receives training and secures tools to prevent them from falling; and
  - Provide prompt rescue of each worker in the event of a fall
  - Get the building owner's certification for anchorages before employees use the RDS. **Certification of anchorages became effective 11-20-2017**
  - Make sure manufacturer instructions are followed
  - Not allow work during hazardous weather

# §1910.28 - Fall Protection

## Paragraph (a):

- Provide protection for each employee exposed to fall of 4 ft. or more and falling object hazards
- Ensure that all fall protection and falling object protection required by this section meet the criteria in § 1910.29 except,
- Personal fall protection systems required by this section meet the criteria of § 1910.140
- Also outlines exceptions to application of this standard

# The exceptions of §1910.28(a) Covered By Other OSHA Laws

- Does not apply to portable ladders
- Tasks of inspection etc., prior to and after the work is completed. (It applies if the protection is installed)
- Exposed perimeters of entertainment stages and rail-station platforms
- Powered platforms covered by §1910.66(j)
- Aerial Lifts covered by §1910.67(c)(2)(v)
- Telecommunications work covered by §1910.268(n)(7) & (8)
- Electrical power generation transmission, and distribution work covered by §1910.269(g)(2)(i)

# §1910.28(b)

Means of fall protection:

- ❖ Guardrail systems;
- ❖ Safety net systems; or
- ❖ Personal fall protection systems, such as personal fall arrest, travel restraint, or positioning systems

# §1910.28 – Fall Protection Plans

## Note to §1910.28(b)(1)(ii):

Employers will be able to rely on Fall Protection Plans under §1926.502(k) and training required under §1926.503(a) and (c), **As a Last Resort.**

- Presumes fall protection using guardrail systems, safety net systems, or fall protection systems is feasible
- States the EMPLOYER HAS THE BURDEN OF PROOF that it is not feasible or creates a greater hazard to use the methods stated in outlined in §1910.28(b)(1)(i)

# Also in §1910.28(b) – Duty to Protect

- Hoist Areas
- Holes
- Dockboards
- Runways & Similar Walkways
- Dangerous Equipment
- Openings (Ex. Wall Opening)
- Repair / Service Pits
- Fixed Ladders
- Outdoor Advertising
- Stairways
- Scaffolds
- Low-Sloped Roofs
- Slaughtering Platform
- Not Otherwise Addressed

# Ladder Safety Systems - §1910.28(b)(9)

## Phase-in of ladder safety systems or personal fall arrest systems on fixed ladders over 24 ft.

Employer have until 11-18-2036 to equip fixed ladders (that extend over 24 feet) with ladder safety or personal fall arrest systems

Final rule grandfathers in cages and wells on existing ladders, but requires during the phase-in period that employers equip new ladders and replacement ladders/ladder sections with ladder safety or personal fall arrest systems



# Fixed Ladders

- Minimum width of rung is 16 inches

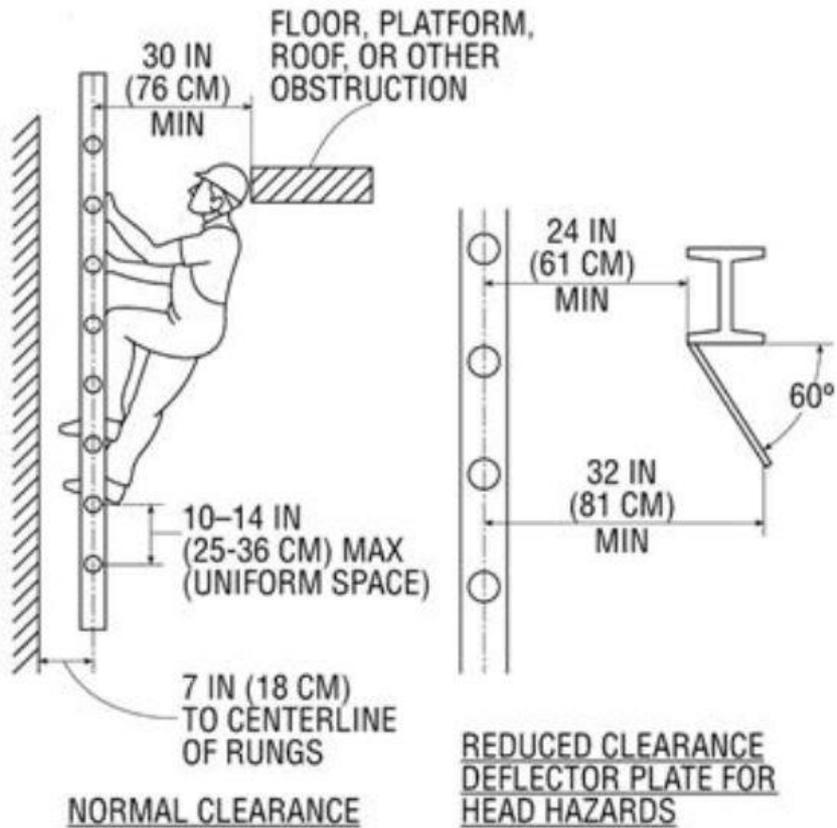


Figure D-5 -- Fixed Ladder Clearances

# §1910.29 Criteria & Practices

- Cages, Wells, and Platforms Used With Fixed Ladders (g)
  - Designed for easy access & egress on ladder
  - Continuous throughout ladder except for access, egress, & points of transfer
  - Will contain climber and direct to a lower landing (50 ft. max between landings)
  - Minimum platform size is 24 inches X 30 inches

# §1910.29 - Fall Protection Systems & Falling Object Protection – Criteria & Practice

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

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

# §1910.29 Criteria & Practices

## Guardrail systems (b) (these are not all specifications)

- Top rail 42"  $\pm$  3" (107 cm)  $\pm$  (8 cm)
- Midrail midway between top rail and surface
- If screens/mesh used, from surface to top rail
- Guardrail force requirement still 200 pounds
- Midrail, screen/ mesh force requirement 150 pounds
  - Parapets can suffice for midrail if at least 21" high (53 cm), but total height of protection must still be 42"  $\pm$  3" (107 cm)  $\pm$  (8 cm)

# §1910.29 Criteria & Practices

- Safety Net Systems (c)
  - must meet the requirements in 29 CFR Part 1926, subpart M
- Designated Areas (d)
  - Employees must remain in designated area
  - Must have warning line system that complies with (d)(2) & (d)(3)
  - Distances 6 feet (1.8 m) & 15 feet (4.6 m) apply for warning distances
  - Clearly visible 25 feet (7.6 m) away

# §1910.29 Criteria & Practices

- Covers (e)
  - Must support twice the weight anticipated
  - Secured to prevent accidental displacement
- Handrails (f)
  - Height range 30" (76 cm) to 38" (97 cm) from the leading edge of tread to top of handrail
  - Smooth to touch and easy to grasp
  - Withstand 200 pounds (890 N) of force



# §1910.29 Criteria & Practices

## Ladder Safety Systems (i)

- ❖ Can climb up and down using both hands. Connection between carrier or lifeline and attachment to body harness not greater than 9”
- ❖ Capable of withstanding drop test of 18 “ (41 cm) with 500 pound (227 kg) weight



# §1910.29 Criteria & Practices

## Personal Fall Protection Systems (j)

- Must meet requirements of §1910.140

## Protection From Falling Objects (k)

- Toeboard minimum height of 3.5 inches
- Panel or screening if height of materials exceed toeboard
- Canopies used for falling object protection must hold dropped objects

# §1910.29 Criteria & Practices

## Grab Handles (I)

- Must not be less than 12 “ (30 cm) long
- Mounted for at least 3” (8 cm) clearance
- Will withstand pullout force equal to
  - Two times the maximum intended load or,
  - 200 pounds (890 N), whichever is greater

# Training - §1910.30

- Will be done BEFORE the employee is exposed to a fall hazard
- Training date for compliance - May 17, 2017
- Trainer must be a qualified person
- Training topics
  - Nature of the fall hazards and how to recognize
  - Procedures to minimize exposure
  - Correct procedures for use of personal fall protection systems and equipment such as dockboards, and rope descent systems
  - Designated areas set-up and use

# §1910.30

## §1910.30 – Training

- Adds training and retraining requirements addressing fall hazards and equipment hazards
- Requires employers make training understandable to workers; done in a manner the workers understand

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

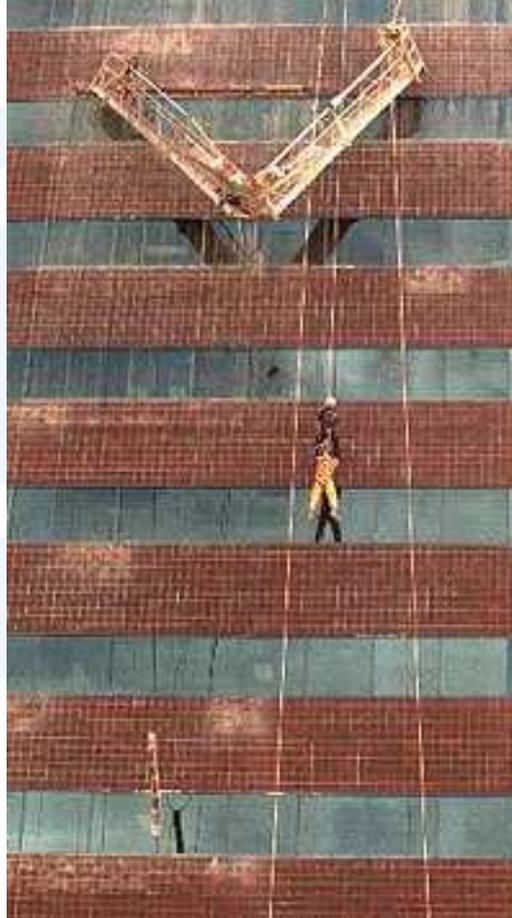
- Adds definitions for personal fall protection systems
- Adds new section on system and use criteria for:
  - Personal fall protection equipment (e.g., lanyards, ropes, D-rings, harnesses)
  - Personal fall arrest systems
  - Travel restraint systems
  - Work positioning systems



# Personal Fall Protection



**Travel Restraint**



**Personal Fall Arrest**



**Work Positioning**

# §1910.140

- (a) Scope
  - Performance, care, and use requirements for all personal fall protection systems
  - Employer must ensure the systems meet the requirements of 1910.140
- (b) Definitions
  - Similar in content to the construction standard, but tailored for general industry

# §1910.140

- (c) General Requirements
  - Specific requirements for design and use of personal fall arrest system components
  - Additional requirements are outlined in paragraphs (d) & (e)
- (d) Personal Fall Arrest Systems
  - System performance criteria
  - System use criteria
  - **Body belts are prohibited as a part of a personal fall arrest system**

# New Appendices in Subpart I - PPE

- Appendix C - Personal Fall Protection Systems (Non-Mandatory) – Go here for compliance assistance with 1910.140
- Appendix D – Test Methods and Procedures for Personal Fall Protection Systems – Go here for assistance with the test methods that determine if equipment will perform in accordance with paragraphs (d) and (e) of 1910.140

# Compliance Assistance Resources

- OSHA's new webpage on subparts D&I:  
[www.osha.gov/walking-working-surfaces/index.html](http://www.osha.gov/walking-working-surfaces/index.html)
- Fact sheets
  - OSHA's Final Rule to Update, Align, and Provide Greater Flexibility in its General Industry Walking-Working Surfaces and Fall Protection Standards; 3 pages
- FAQs
  - Hits the high points of major equipment users and compliance dates

# Critical Compliance Dates

Final Rule was published on November 18, 2016. Most of it became effective 60 days later. Compliance in critical areas are due by:

<b>Final Subpart D Section and Requirement</b>	<b>Compliance Date</b>
§1910.27(b)(1) – Certification of anchorages	November 20, 2017
§1910.28(b)(9)(i)(A) – Deadline by which employers must equip existing fixed ladders with a cage, well, ladder safety system, or personal fall arrest system	November 19, 2018
§1910.28(b)(9)(i)(B) – Deadline by which employers must begin equipping new fixed ladders with a ladder safety system or personal fall arrest system	November 19, 2018
§1910.28(b)(9)(i)(D) – Deadline by which all fixed ladders must be equipped with a ladder safety system or personal fall arrest system	November 18, 2036
§1910.30(a) and (b) – Deadline by which employers must train employees on fall and equipment hazards	May 17, 2017

# Contact Information



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