

**National Grain
and Feed Association**

OSHA's Walking-Working Surfaces 1910.22 (D)

Jim Seibert

National Grain and Feed Association

27 Mar 2019

NDGFA Fargo, ND



Outline

- I. Background
- II. OSHA's Words
- III. Subpart D Definitions
- IV. Fixed Ladders
- V. Portable Ladders
- VI. Stair Ways
- VII. Guardrails, Handrails, and Stair Rails
- VIII. Dockboards
- IX. Training Requirements
- X. Frequently Asked Questions



Walking Working Surfaces

- On November 18, 2016 OSHA issued a new [final rule](#) that updates and revises the general industry Walking-Working Surfaces and Personal Protective Equipment (Fall Protection Systems) standards on slip, trip, and fall hazards
- Includes revised and new provisions addressing
 - fixed ladders;
 - rope descent systems;
 - fall protection systems and criteria (including personal fall protection systems); and
 - training on fall hazards and fall protection systems
- Adds requirements on the design, performance and use of personal fall protection systems



I. Background

Since the Agency's founding in 1970, Fall Protection has been one of OSHA's areas of emphasis. One of the first standards published was Subpart D to the General Industry's Standard for walking-working surfaces.

- **1971** – Adopted and based on several pre-1971 editions from the American National Standards Institute (ANSI). Recognized guardrails and barriers as primary methods of protection but failed to directly recognize personal fall protection systems.
- **1984** – OSHA directive that the use of personal fall arrest systems would be permitted when workers were exposed to falls of 4 plus feet if the situation was not occurring on a “predictable and regular basis”.



I. Background Cont.

- **1994** – OSHA updates GI PPE Standards requiring employers to conduct hazard assessments, select proper PPE, remove defective/damaged PPE from service and provide employees training in proper use, care and disposal of PPE. The Updated Standard did not apply the provisions to personal fall protection systems.
- **1996** – OSHA issues “Miles Memo” that directed OSHA inspectors **not** to cite rolling stock under Subpart D. The memo specifically state, “...falls from rolling stock would not be cited under the fall protection standard because it was not appropriate to cite exposure to fall hazards from tops of rolling stock unless the stock was inside of or contiguous to a structure where fall protection is feasible”.



I. Background Cont.

- **02May2003** – OSHA published a notice to reopen the record on Subpart D and I rulemakings brought about by comments and information of significant technological advances in fall protection and personal fall arrest systems.
- **24May2010** – OSHA published a consolidated proposed rule on Subpart D and I. The proposal requested separate comments on whether specific regulations are needed to address falls from rolling stock and commercial motor vehicles. In the proposal, the agency states that the Miles Memo “...did not result in clear direction to the public or to OSHA’s field staff”.



I. Background

- **18Nov2017** – OSHA issues a new final rule that updates and revises the general industry Walking-Working Surfaces and PPE (Fall Protection Systems) standards on slip, trip and fall hazards. Specifically, the rule updates general industry standards addressing slip, trip, and fall hazards (Subpart D), and adds requirements for personal fall protection systems (Subpart I). The final rule applies to all general industry workplaces and 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.



II. Walking-Working Surfaces and Fall Protection Final Rule

- Incorporates advances in technology, industry best practices and national consensus standards.
- Updates Subpart D (slips, trips, and fall hazards) + adds requirements for Subpart I (personal fall protection systems)
- Affords greater flexibility to employers in choosing a fall protection system.



II. Walking-Working Surfaces and Fall Protection Final Rule

- Applies to all general industry workplaces and covers all walking-working surfaces, including:
 - * Floors
 - * Stairs
 - * Roofs
 - * Elevated Walkways
 - * Scaffolds
 - * Ramps
 - * Ladders



II. Walking-Working Surfaces and Fall Protection Final Rule - Timeline

- May 2017 – Exposed employee trained on fall hazards and equipment
- Nov 2017 – Inspect and certify permanent anchorages for rope descent systems
- Nov 2018 – Install personal fall arrest or ladder safety systems on new ladders > 24' and on replacement ladders/ladder sections



II. Walking-Working Surfaces and Fall Protection Final Rule - Timeline

- Nov 2018 – Existing fixed ladders > 24' equipped with a cage, well, personal fall arrest system or ladder safety system.
- Nov 2036 – Replace cages and wells with ladder safety or personal fall arrest systems on all fixed ladders > 24'



A. Rolling Stock

- Under Obama Administration, OSHA essentially ignored the 1996 Miles Memo and instead cited numerous facilities for not conducting a proper PPE hazard assessment when allowing workers on top of rolling stock without fall protection
- NGFA Safety, Health, and Environmental Quality Committee Chairman Testified on behalf of the industry in 2011 and highlighted the effectiveness of the Miles Memo and opposed any additional regulatory burdens with operational and economic impact on the industry.
- The new final rule does not include any specific fall protection requirements for rolling stock and commercial motor vehicles in Subpart D or I. This means that the Miles Memo is still in effect.



B. Combustible Dust

- OSHA will continue to regulate and “interpret” combustible dust hazards on/as walking working surfaces
- “Combustible dust” not included in the final language
- If an OSHA inspector sees “excessive” dust outside of the priority housekeeping area, they could potentially issue a citation under this standard
- A grain facility can now be cited under 1910.272, 1910.22(a)(1) or the General Duty Clause. The “Trifecta”



C. Summary of Walking Working Surfaces Standard

1. Compliance flexibility provided with new subpart D on:
 - Guardrails
 - Designated Areas
 - Safety Net Systems
 - Travel Restraint Systems
 - Personal Fall Arrest (PFA) Systems
2. Subpart I provides criteria on the proper use of personal fall protection systems when used by the employer
3. The Appendix provides examples of procedures and test methods used by PPE manufacturers to prove compliance with PPE Criteria.



C. Summary of Walking Working Surfaces Standard Cont.

4. 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.
5. OSHA expects employers to:
 - Inspect and provide working conditions that are free of known fall dangers.
 - Keep floors in work areas in a clean and, so far as possible, a dry condition.
 - Select and provide needed PPE at no cost to workers.
 - Utilize guardrail or other permissible systems to engineer out fall hazards where possible, but otherwise effectively use PFAs, train workers on use of PPE, maintain, inspect equipment.
 - Provide appropriate ladders or other manlifts to allow workers to safely access work areas (and train them on the use of this equipment).
 - Train workers generally about fall hazards and PPE use in a language that they can understand.

D. Timeline

Most of the rule became effective January 17, 2017, 60 days after publication in the *Federal Register*, but some provisions have delayed effective dates, including:

- Workers are trained on fall hazards **(May 17, 2017)**,
- Workers are trained on equipment covered by final rule **(May 17, 2017)**,
- Inspecting and certifying permanent anchorages for rope descent systems **(November 20, 2017)**, <https://www.osha.gov/laws-regs/standardinterpretations/2017-11-20>
- 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 **(on and after November 19, 2018)**,
- Ensuring existing fixed ladders over 24 feet, are equipped with a cage, well, personal fall arrest system, or ladder safety system no later than **(November 19, 2018)** and,
- Having ladder safety or personal fall arrest systems installed on all fixed ladders over 24 feet by **(November 18, 2036)**.



E. Final Subpart D Re-Organizations

With the revision of Subpart D OSHA changed most of the titles for each of the standards that appear in it. Information that was found under the old standard numbers are now found under a completely different standard numbers.

PREVIOUS SUBPART D	NEW SUBPART D
1910.21 Definitions	1910.21 Scope and Definitions
1910.22 General Requirements	1910.22 General Requirements
1910.23 Guarding Floor and Wall Openings and Holes	1910.23 Ladders
1910.24 Fixed Industrial Stairs	1910.24 Step Bolts and Manhole Steps
1910.25 Portable Wood Ladders	1910.25 Stairways
1910.26 Portable Metal Ladders	1910.26 Dockboards
1910.27 Fixed Ladders	1910.27 Scaffolds and Rope Descent Systems
1910.28 Safety Requirements for Scaffolding	1910.28 Duty to Have Fall Protection and Falling Object Protection
1910.29 Manually Propelled Mobile Ladder Stands and Scaffolds (Towers)	1910.29 Fall Protection Systems and Falling Object Protection – Criteria and Practices
1910.30 Other Working Surfaces	1910.30 Training Requirements



E. Final Subpart D Re-Organization

NEW SUBPART D	OLD SUBPART D
1910.21 Scope & Definitions	1910.21 Definitions
1910.22 General Requirements	1910.22 General Requirements
1910.23 Ladders	1910.23 Guarding Floor & Wall Openings & Holes
1910.24 Step Bolts & Manhole Steps	1910.24 Fixed Industrial Stairs
1910.25 Stairways	1910.25 Portable Wood Ladders
1910.26 Dock boards	1910.26 Portable Metal Ladders
1910.27 Scaffolds & Rope Decent Systems	1910.27 Fixed Ladders
1910.28 Duty to have Fall Protection & Falling Object Protection	1910.28 Safety Requirements for Scaffolding
1910.29 Fall Protection Systems & Falling Object Protection – Criteria & Practices	1910.29 Manually Propelled Mobile Ladder Stands & Scaffolds (Towers)
1910.30 Training Requirements	1910.30 Other Working Surfaces



III. Subpart D Definitions

Under the new Subpart D revisions several new and revised terms and conditions are listed throughout the regulation. A compiled list of these definitions is provided in a Guidance Document on the NGFA website. <https://www.ngfa.org/issues/focusonsafety/>

Unless you want me to cover all of them now?

****RULE OF 24'***

In the event that; A ladder extends more than 24' or exposes a worker to a fall of more than 24' to a lower level.



III. Subpart D Definitions

- **Anchorage** means a secure point of attachment for equipment such as lifelines, lanyards, deceleration devices, and rope descent systems.
- **Authorized** means an employee who the employer assigns to perform a specific type of duty, or allows in a specific location or area.
- **Cage** means an enclosure mounted on the side rails of a fixed ladder or fastened to a structure behind the fixed ladder that is designed to surround the climbing space of the ladder. A cage also is called a "cage guard" or "basket guard."
- **Dockboard** means a portable or fixed device that spans a gap or compensates for a difference in elevation between a loading platform and a transport vehicle. Dockboards include, but are not limited to, bridge plates, dock plates, and dock levelers.
- **Fall hazard** means any condition on a walking-working surface that exposes an employee to a risk of harm from a fall on the same level or to a lower level.
- **Fall protection** means any equipment, device, or system that prevents an employee from falling from an elevation or mitigates the effect of such a fall.



III. Subpart D Definitions Cont.

- **Fixed ladder** means a ladder with rails or individual rungs that is permanently attached to a structure, building, or equipment. Fixed ladders include individual-rung ladders, but not ship stairs, step bolts, or manhole steps.
- **Grab bar** means an individual horizontal or vertical handhold installed to provide access above the height of the ladder.
- **Guardrail system** means a barrier erected along an unprotected or exposed side, edge, or other area of a walking working surface to prevent employees from falling to a lower level.
- **Handrail** means a rail used to provide employees with a handhold for support.
- **Ladder** means a device with rungs, steps, or cleats used to gain access to a different elevation.
- **Ladder safety system** means a system designed to eliminate or reduce the possibility of falling from a ladder. A ladder safety system usually consists of a carrier, safety sleeve, lanyard, connectors, and body harness. Cages and wells are not ladder safety systems.



III. Subpart D Definitions Cont.

- **Maximum intended load** means the total load (weight and force) of all employees, equipment, vehicles, tools, materials, and other loads the employer reasonably anticipates to be applied to a walking-working surface at any one time.
- **Personal fall arrest system** means a system used to arrest an employee in a fall from a walking-working surface. It consists of a body harness, anchorage, and connector. The means of connection may include a lanyard, deceleration device, lifeline, or a suitable combination of these.
- **Personal fall protection system** means a system (including all components) an employer uses to provide protection from falling or to safely arrest an employee's fall if one occurs. Examples of personal fall protection systems include personal fall arrest systems, positioning systems, and travel restraint systems.
- **Platform** means a walking-working surface that is elevated above the surrounding area.
- **Positioning system** (work-positioning system) means a system of equipment and connectors that, when used with a body harness or body belt, allows an employee to be supported on an elevated vertical surface, such as a wall or window sill, and work with both hands free. Positioning systems also are called "positioning system devices" and "work-positioning equipment."



III. Subpart D Definitions Cont.

- **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 also are called "positioning system devices" and "work-positioning equipment."
- **Rope descent system** means a suspension system that allows an employee to descend in a controlled manner and, as needed, stop at any point during the descent. A rope descent system usually consists of a roof anchorage, support rope, a descent device, carabiner(s) or shackle(s), and a chair (seatboard). A rope descent system also is called controlled descent equipment or apparatus. Rope descent systems do not include industrial rope access systems.
- **Side-step ladder** means a type of fixed ladder that requires an employee to step sideways from it in order to reach a walking-working surface, such as a landing.
- **Stair rail or stair rail system** means a barrier erected along the exposed or open side of stairways to prevent employees from falling to a lower level.
- **Stairway (stairs)** means risers and treads that connect one level with another, and includes any landings and platforms in between those levels. Stairways include standard, spiral, alternating tread-type, and ship stairs.



III. Subpart D Definitions Cont.

- **Standard stairs** means a fixed or permanently installed stairway. Ship, spiral, and alternating tread-type stairs are not considered standard stairs.
- **Through ladder** means a type of fixed ladder that allows the employee to step through the side rails at the top of the ladder to reach a walking-working surface, such as a landing.
- **Travel restraint system** means a combination of an anchorage, anchorage connector, lanyard (or other means of connection), and body support that an employer uses to eliminate the possibility of an employee going over the edge of a walking-working surface.
- **Unprotected sides and edges** mean any side or edge of a walking-working surface (except at entrances and other points of access) where there is no wall, guardrail system, or stair rail system to protect an employee from falling to a lower level.
- **Walking-working surface** means any horizontal or vertical surface on or through which an employee walks, works, or gains access to a work area or workplace location.
- **Warning line** means a barrier erected to warn employees that they are approaching an unprotected side or edge, and which designates an area in which work may take place without the use of other means of fall protection.



IV. Fixed Ladders

- Old Subpart D, fixed ladder standards were found in 1910.27. The new requires three different standards. (1910.23, .28, and .29)
- Oftentimes OSHA issues citations even when they do not have a standard that addresses the specific hazard. OSHA can still issue and enforce a citation if they can prove that there is another nationally recognized safety standard (ANSI) that applies to the hazard.
- ANSI standards are more frequently updated than OSHA standards and are recognized to contain the most current and best safety practices.



IV. Fixed Ladders Cont.

- 1910.23 – provides general requirements for all ladders.
- 1910.28 – provides general requirements for protection from falls.
- 1910.29 – provides general requirements for safety cages, wells, and platforms used with fixed ladders.



IV. Fixed Ladders Cont.

Fixed Ladders Extending More Than 24 Feet Above a Lower Level 1910.28(b)(9)(i)(A) and (B)

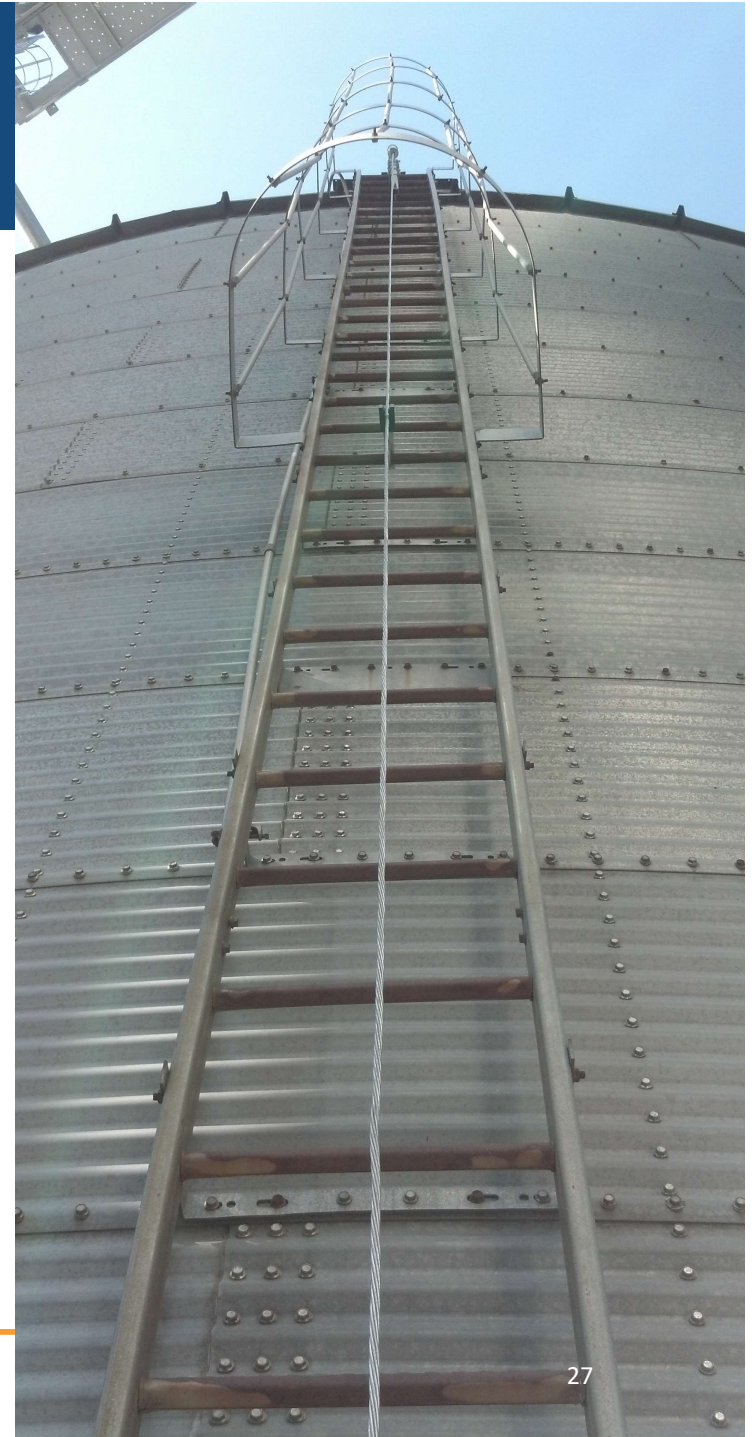
- Existing Fixed Ladders

Before November 19, 2018 *rule of 24' is equipped with a personal fall arrest system or; ladder safety system or; cage or well.

- New Fixed Ladders

On or after November 19, 2018 must be equipped with a personal fall arrest system or a ladder safety system.

Note: Safety cages are not required but may be installed by the employer as long as they do not interfere with the operation of the personal fall arrest or ladder safety system.



IV. Fixed Ladders Cont.

- **Replacing Ladders after November 19, 2018 1910.28(b)(9)(i)(C)**

If a fixed ladder, cage or well, or any portion or section is replaced, a personal fall arrest system or a ladder safety system must be installed in at least that section of the fixed ladder, cage or well where the replacement is located.

- **Final Deadline on and after November 18, 2036 1910.28(b)(9)(i)(D)**

All fixed ladders must be equipped with a personal fall arrest system or a ladder safety system. **Note: Safety cages and wells are no longer required.**

- **Single or Multiple Section Ladders With Fall Protection or Ladder Safety Systems 1910.28(b)(9)(ii)(A) and (B), The Employer MUST:**

Ensure that personal fall arrest systems or ladder safety systems provide protection throughout the entire vertical distance of the ladder, **including all ladder sections.**

Ensure the ladder has rest platforms provided at max intervals of 150 feet.



IV. Fixed Ladders Cont.

**Ladder Sections With Safety Cages or Wells
Installed Before November 19, 2018**
**1910.28(b)(9)(iii)(A),(B), (iv) The Employer
MUST**

- Ensure ladders are offset from adjacent sections.
- Ladders have landing platforms provided at maximum intervals of 50 feet.
- MAY use a cage or well in combination with a personal fall arrest system or ladder safety system **provided that the cage or well does not interfere with the operation of the system.**



IV. Fixed Ladder Landing Platforms

- Will need immediate attention. Includes platforms provided to assist employees in transitioning from one offset ladder section to another as well as all other access/egress points from fixed ladders at walkways and other platform areas.
- OSHA added new definitions of a Platform “***...A walking-working surface that is elevated above the surrounding area. Any horizontal or vertical surface on or through which an employee walks, works, or gains access to a work area or workplace location.***”
- Employers must....Ensure 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. OSHA 1910.28(b)(3)(iv)



IV. Fixed Ladder Landing Platforms

- The standard does not allow for any delayed or phase-in time period to come into compliance. Therefore, all ladder landing platforms and other ladder access/egress points that expose an employee to a fall of 4 feet or greater to a lower level should be assessed and self-closing swing gates installed.



IV. Interjection of Cages and Wells

1910.29(g) *Cages, wells, and platforms used with fixed ladders.* The employer must ensure:

- designed, constructed, and maintained to permit easy access to, and egress from, the ladder that they enclose
- are continuous throughout the length of the fixed ladder, except for access, egress, and other transfer points;
- designed, constructed, and maintained to contain employees in the event of a fall, and to direct them to a lower landing; and
- platforms used with fixed ladders provide a horizontal surface of at least 24 inches by 30 inches

***Note to paragraph (g):** Section 1910.28 establishes the requirements that employers must follow on the use of cages and wells as a means of fall protection.



IV. Fixed Ladders Analysis

- **As of this presentation, OSHA has not yet published the compliance directive or letter of instruction for the update to Subpart D which may impact some of the analyses in this section. The analyses that appear in this section were conducted based on the best information available at the time of this presentation.**



IV. Fixed Ladders Analysis Cont.

- Under the previous standard, safety cages or wells were required if the fixed ladder or fall to a lower level exceeded 20 feet. That has now been increased to 24 feet. Ladders currently installed, that extend between 20 and 24 feet and/or have fall distances to a lower level of between 20 to 24 feet with safety cages properly mounted that meet the specified design criteria (safety cage design requirements have not changed in the revised standard)
- Ladders currently installed, that are between 20 and 24 feet and/or have fall distances to a lower level of between 20 to 24 feet or less that do not have safety cages installed and were in violation of the previous standard are now in compliance. As long as the ladder does not extend more than 24 feet or expose a worker to a lower level fall of more than 24 feet, no protection is required.



IV. Fixed Ladders Analysis Cont.

Fixed Ladders – 24 Feet

- Current requirements: For existing and new fixed ladders that extend more than 24 feet (7.3 m) above a **lower level**, the employer must ensure:
 - 1) each existing fixed ladder installed before Nov. 19, 2018 is equipped with a personal fall arrest system, ladder safety system, cage, or well; and/or;
 - 2) each new fixed ladder installed on and after Nov. 19, 2018, is equipped with a personal fall arrest system or a ladder safety system.
- **Under the previous standard, safety cages or wells were required if the fixed ladder or fall to a lower level exceeded 20 feet. That has now been increased to 24 feet. *As long as the ladder does not extend more than 24 feet or expose a worker to a lower level fall of more than 24 feet, no protection is required.***



IV. Fixed Ladders Analysis Cont.

Existing Fixed Ladders

- Under the revised standard, existing fixed ladder sections installed before November 19, 2018 that ***rule of 24'** having safety cages or wells must.....
 - Landing platforms provided at maximum intervals of 50 feet.
Note: Previous standard was 30 feet.
 - Ensure ladders are offset from adjacent sections.
 - Personal fall arrest systems or ladder safety systems may be installed and used in combination with a safety cage as long as the cage does not interfere with the operation of the system.

Note: By November 19, 2018, ALL existing fixed ladders that land within the *rule of 24'** must be equipped with a personal fall arrest system or; ladder safety system or; cage or well. 1910.28(b)(9)(i)(A)**



IV. Fixed Ladders Analysis Cont.

Replacing Existing Ladders after November 19, 2018

Under the revised standard, when replacing any portion or section of safety cages, wells or fixed ladders that ***rule of 24'**

- A personal fall arrest system or ladder safety system must be installed in at least that section of the fixed ladder, cage or well where the replacement is located. OSHA 1910.28(b)(9)(i)(C)



IV. Fixed Ladders Analysis Cont.

Installing New Fixed Ladders on or After Nov. 19, 2018

Each fixed ladder that ***rule of 24'**, must....

- Be equipped with a personal fall arrest system or a ladder safety system.
- Provide protection throughout the entire vertical distance of the ladder including all ladder sections.
- The ladder has rest platforms provided at **maximum intervals of 150 feet.**



IV. Fixed Ladders Analysis Cont.

Final Deadline

- On and after November 18, 2036, **ALL** fixed ladders ***rule of 24'** must be equipped with a personal fall arrest system or ladder safety system. OSHA 1910.28(b)(9)(i)(D)

Analysis

- On and after November 18, 2036 OSHA will require employees to be in fall protection when climbing all fixed ladders ***rule of 24'**. Safety cages are no longer considered fall protection and not required.

Ladder Landing Platforms

- Will need immediate attention. Includes platforms provided to assist employees in transitioning from one offset ladder section to another as well as all other access/egress points from fixed ladders at walkways and other platform areas. OSHA added new definitions of a Platform ... "A walking-working surface that is elevated above the surrounding area." Walking-Working Surface... "Any horizontal or vertical surface on or through which an employee walks, works, or gains access to a work area or workplace location." Employers must....
- Ensure 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. OSHA 1910.28(b)(3)(iv)



IV. Fixed Ladders Analysis Cont.

Ladder Inspections

- Under the revised standard ladders must....

Be inspected before initial use in each work shift and more frequently as necessary to identify any visible defects that could cause employee injury. OSHA 1910.23(b)(9)

Analysis

- Not quite sure how OSHA will enforce this particular standard, especially for fixed ladders. This standard falls under the section titled General Requirements for **ALL** Ladders. There does not appear to be an exception for fixed ladders and there is nothing specifically mentioned in OSHA standard 1910.23(d) which covers requirements specifically for fixed ladders.



V. Portable Ladders

- Ensure rungs and steps of portable metal ladders are corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize possibility of slipping
- Stepladders and combination ladders used as stepladder must have metal spreader or locking device to security hold open when in use
- Ladders may not be loaded beyond maximum intended load, must be used only on stable and level surfaces (unless secured or stabilized to prevent displacement)
- No portable single rail ladders may be used
- No ladder may be moved, shifted, or extended while a worker is on it
- Ladders may not be placed in passageways, doorways, or driveways where they could be displaced unless secured, or guarded by temporary barricade



V. Portable Ladders

- Cap and top step of a stepladder may not be used as steps
- Portable ladders used on slippery surfaces must be secured and stabilized
- Top of non-self-supporting ladder must be placed so both side rails are supported unless it has a single support attachment
- Portable ladders used to gain access to upper landing surface must have side rails extending at least 3 feet above landing surface
- Ladders/sections cannot be tied or fastened together to provide added length unless designed for this, and ladders cannot be placed on boxes or other unstable bases to obtain additional height



V. Mobile Ladder Stands and Platforms

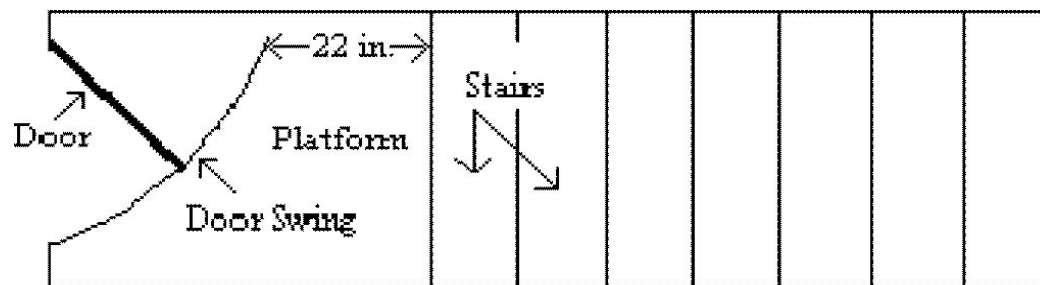
- Mobile ladder stands, platforms, wheels and casters under load must support 4 times maximum intended load, plus proportional share of unit's weight
- Meet specified design criteria, including slip-resistant surfaces
- Stands and platforms with wheels or casters must have system to impede horizontal movement when occupied, and may not be moved when EE is on it
- All ladder stand platform with platform height above 10-feet must have guardrails and toeboards on exposed sides and ends of platform
- Removable gates or non-rigid members, such as chains, may be used on mobile ladder stand platforms instead of handrails/guardrails in special-use applications



VI. Stairways

General Requirements – 1910.25(b)

- Vertical clearance above any stair tread to any overhead obstruction is at least 6 feet, 8 inches, at least 6 feet, 6 inches on spiral stair cases.
- Uniform riser heights and tread depths between landings;
- Stairway landings and platforms are at least the width of the stair and at least 30 inches in depth, as measured in the direction of travel.
- When a door or a gate opens directly on a stairway, a platform is provided, and the swing of the door or gate does not reduce the platform's effective usable depth to:
 - Less than 20 inches for platforms installed before January 17, 2017; and
 - Less than 22 inches for platforms installed on or after January 17, 2017



VI. Stairways Cont.

General Requirements – 1910.25(b) Cont.

- Can support at least five times the normal anticipated live load, but never less than a concentrated load of 1,000 pounds applied at any point.
- Standard stairs are used to provide access from one walking-working surface to another when operations necessitate regular and routine travel between levels, including access to operating platforms for equipment. Winding stairways may be used on tanks and similar round structures when the diameter of the tank or structure is at least 5 feet .
- Spiral, ship, or alternating tread-type stairs are used only when the employer can demonstrate that it is not feasible to provide standard stairs.
- Spiral, ship, or alternating tread-type stairs, they are installed, used, and maintained in accordance with manufacturer's instructions.

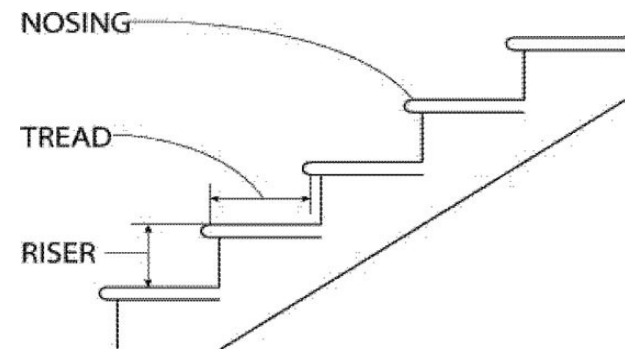


VI. Stairways Cont.

Standard Stairs – 1910.25 (c)(1-4)

- Installed at angles between 30 to 50 degrees from the horizontal;
- Maximum riser height of 9.5 inches; (Exceptions apply to standard stairs installed prior to January 17, 2017.)
- Minimum tread depth of 9.5 inches; (Exceptions apply to standard stairs installed prior to January 17, 2017.) and
- Have a minimum width of 22 inches between vertical barriers.

Angle to Horizontal	Rise (in inches)	Tread Run (in inches)
30 deg. 35'	6 1/2	11
32 deg. 08'	6 3/4	10 3/4
33 deg. 41'	7	10 1/2
35 deg. 16'	7 1/4	10 1/4
36 deg. 52'	7 1/2	10
38 deg. 29'	7 3/4	9 3/4
40 deg. 08'	8	9 1/2
41 deg. 44'	8 1/4	9 1/4
43 deg. 22'	8 1/2	9
45 deg. 00'	8 3/4	8 3/4
46 deg. 38'	9	8 1/2
48 deg. 16'	9 1/4	8 1/4
49 deg. 54'	9 1/2	8



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



VI. Stairways Cont.

Spiral Stairs – 1910.25 (d)(1-5)

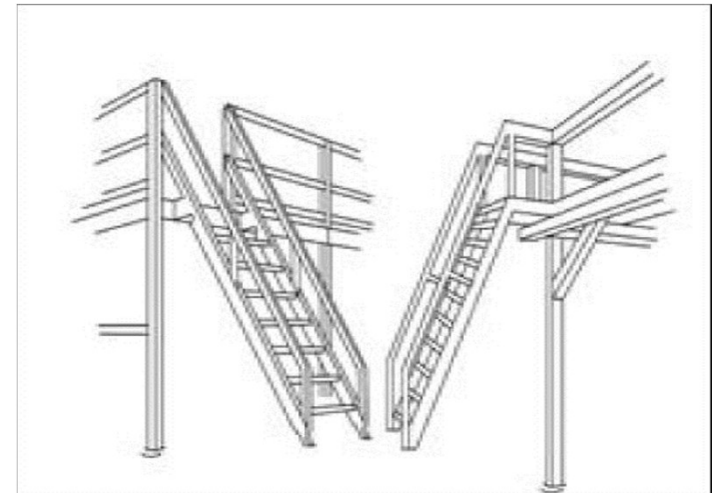
- Must have a minimum clear width of 26 inches;
- Must have a maximum riser height of 9.5 inches;
- Must have a minimum headroom above spiral stair treads of at least 6 feet, 6 inches, measured from the leading edge of the tread;
- Must have a minimum tread depth of 7.5 inches, measured at a point 12 inches from the narrower edge;
- Must have a uniform tread size;



VI. Stairways Cont.

Ship Stairs – 1910.25 (e)

- Are installed at a slope of 50 to 70 degrees from the horizon
- Have open risers with a vertical rise between tread surfaces of 6.5 to 12 inches;
- minimum tread depth of 4 inches
- minimum tread width of 18 inches



VI. Stairways Cont.

Alternating Tread-Type Stairs – 1910.25 (f)

- Have a series of treads installed at a slope of 50 to 70 degrees from the horizontal;
- Have a distance between handrails of 17 to 24 inches;
- Have a minimum tread depth of 8.5 inches; and
- Have open risers if the tread depth is less than 9.5 inches;
- Have a minimum tread width of 7 inches, measured at the leading edge of the tread (*i.e.*, nosing).



VII. Guardrails, Handrails, and Stair Rails.

Protection From Fall Hazards – 1910.28(b)

- The employer must ensure each employee on a runway or similar walkway is protected from falling 4 feet or more to a lower level by a guardrail system.
- When an employer can demonstrate that it is not feasible to have guardrails on both sides of a runway used exclusively for a special purpose, the employer may omit the guardrail on one side of the runway provided;
- The runway is at least 18 inches wide and;
- Each employee is provided with and uses a personal fall arrest system or travel restraint system.



VII. Guardrails, Handrails, and Stair Rails Cont.

Dangerous Equipment – 1910.28(b)(6)

- The employer must ensure that each employee less than 4 feet above dangerous equipment is protected from falling into or onto the dangerous equipment by a guardrail system or a travel restraint system unless the equipment is covered or guarded to eliminate the hazard.
- Each employee 4 feet or more above dangerous equipment must be protected from falling by;
 - A) Guardrail systems,
 - B) Safety net systems,
 - C) Travel restraint systems or
 - D) Personal fall arrest systems.

Openings – 1910.28(b)(7)

- Each employee on a walking-working surface near an opening, including one with a chute attached, where the inside bottom edge of the opening is less than 39 inches above that walking-working surface and the outside bottom edge of the opening is 4 feet or more above a lower level is protected from falling by the use of:
 - A) Guardrail systems,
 - B) Safety net systems,
 - C) Travel restraint systems, or
 - D) Personal fall arrest systems.



VII. Guardrails, Handrails, and Stair Rails Cont.

Guardrail Systems – 1910.29(b)

The employer must ensure guardrail systems meet the following requirements:

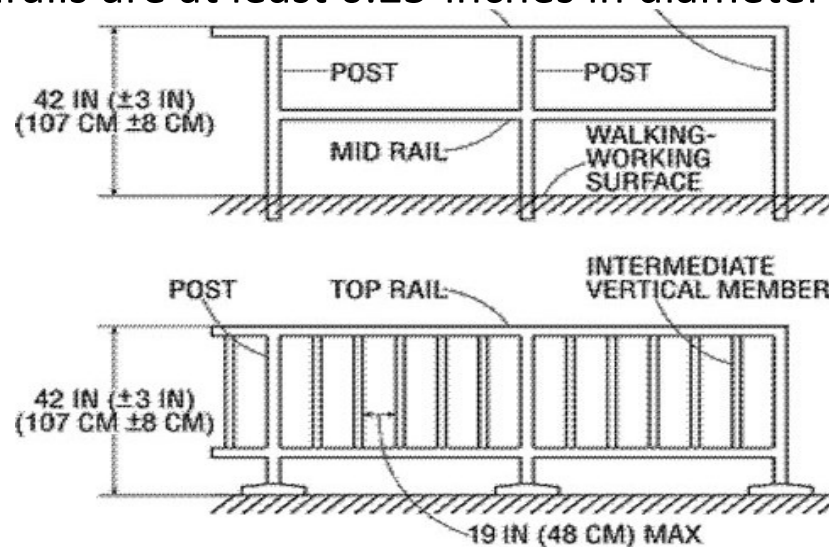
- The top edge height of top rails, or equivalent guardrail system members, are 42 inches, plus or minus 3 inches, above the walking-working surface.
- Midrails are installed at a height midway between the top edge of the guardrail system and the walking-working surface;
- Screens and mesh extend from the walking-working surface to the top rail and along the entire opening between top rail supports;
- Intermediate vertical members (such as balusters) are installed no more than 19 inches apart; and
- Other equivalent intermediate members (such as additional midrails and architectural panels) are installed so that the openings are not more than 19 inches wide.



VII. Guardrails, Handrails, and Stair Rails Cont.

Guardrail Systems – 1910.29(b) - Continued

- Guardrail systems are capable of withstanding, without failure, a force of at least 200 pounds applied in a downward or outward direction within 2 inches of the top edge, at any point along the top rail. Cannot deflect to a height of less than 39 inches above the WW&S
- Steel banding and plastic banding are not used for top rails or midrails.
- Top rails and midrails are at least 0.25-inches in diameter or in thickness.



VII. Guardrails, Handrails, and Stair Rails Cont.

Handrails and Stair Rails Systems – 1910.29(f)

The employer must ensure:

- Handrails are not less than 30 inches and not more than 38 inches, as measured from the leading edge of the stair tread to the top surface of the handrail.
- The height of stair rail systems installed before January 17, 2017 is not less than 30 inches from the leading edge of the stair tread to the top surface of the top rail and;
- The height of stair rail systems installed on or after January 17, 2017 is not less than 42 inches from the leading edge of the stair tread to the top surface of the top rail.
- The top rail of a stair rail system may serve as a handrail only when;
- The height of the stair rail system is not less than 36 inches and not more than 38 inches as measured at the leading edge of the stair tread to the top surface of the top rail and;
- The top rail of the stair rail system meets the other handrail requirements above and were installed before January 17, 2017.
- The minimum clearance between handrails and any other object is 2.25 inches.



Stair/Hand Rail Combinations

OSHA Explanation:

- The new standard removes the old upper limit for existing rails (there were some circumstances where an employer was technically in violation because their stair rail was over 34 inches in height).
- The new standard fixes that for existing stair rails. If the rail height is over 38 inches for an existing stair rail, you can't use that rail to double as a handrail (it would have been in violation of the previous standard).
- But anywhere from 30 to 38 inches is permissible for existing stair rails to double as handrails, because 30-34 inches was previously in compliance, and 36-38 inches is permitted by the new standard.



Stair/Hand Rail Combination

OSHA's Explanation from Area Directors and Regional Administrators.

- Stair rail systems and handrails installed **before** January 17, 2017 that were in compliance with the requirements in the old standard are not affected
- After January 17, 2017:
 - All stair rail systems must be no less than 42" from the leading edge of the stair tread to the top surface of the top rail;
 - Systems installed after January 17, 2017 must also include an **independent hand rail** being not less than 30" and not more than 38"



Update to Guidance Document



National Grain
and Feed Association

www.ngfa.org

November 16, 2018

OSHA's Walking Working Surfaces Standard: Update on Stair/Hand Rails and Ladders

In 2016, the Occupational Safety and Health Administration (OSHA) revised its general industry standards addressing slip, trip and fall hazards found in Subpart D, otherwise known as the Walking Working Surfaces standard. At NGFA's request, OSHA's Directorate of Enforcement Programs (DEP) clarified the rules on: 1) Stair /Hand rails; and 2) Fixed Ladders under 24 feet.

Stair/Hand Rail Combinations

Current requirements: The top rail of a stair rail system may serve as a handrail only when the height of the stair rail system is not less than 36 inches (91 cm) and not more than 38 inches (97 cm) as measured at the leading edge of the stair tread to the top surface of the top rail.

OSHA Explanation:

The new standard removes the old upper limit for existing rails (there were some circumstances where an employer was technically in violation because their stair rail was over 34 inches in height). The new standard fixes that for existing stair rails. If the rail height is over 38 inches for an existing stair rail, you can't use that rail to double as a handrail (it would have been in violation of the previous standard). But anywhere from 30 to 38 inches is permissible for existing stair rails to double as handrails, because 30-34 inches was previously in compliance, and 36-38 inches is permitted by the new standard.

Fixed Ladders – 24 Feet

Current requirements: For existing and new fixed ladders that extend more than 24 feet (7.3 m) above a lower level, the employer must ensure: 1) each existing fixed ladder installed before Nov. 19, 2018 is equipped with a personal fall arrest system, ladder safety system, cage, or well; and/or; 2) each new fixed ladder installed on and after Nov. 19, 2018, is equipped with a personal fall arrest system or a ladder safety system.

OSHA Explanation:

For a ladder that is less than 24 feet, it is feasible for an employer to make the argument that a guarded platform is the lower level. One would have to show that it is not reasonably possible for an employee to fall past the platform. It's likely that the standard minimum size rest platform (24x30 inches) is too small to show that it is not reasonably possible for an employee to fall past the platform. An employer might be able to show that a larger platform would prevent a fall past it. Further, in OSHA's Frequently Asked Questions related to the Walking Working Surfaces standard, the terms "lower level" and "ground" are used interchangeably and should not be taken literally in each context used.

Background

After OSHA revised its general industry standards addressing slip, trip and fall hazards found in the Walking Working Surfaces standard, the NGFA published a [guidance document](#) designed to provide both an overview of the changes made to the standard and serve as a foundation upon which individual companies can build their own tailored plans specific to their facility, operations, personnel, and other conditions. Sample documents found in the appendices provide templates that may be used to update site-specific programs and procedures.

This one-pager is based on information from OSHA's Directorate of Enforcement Programs (DEP) clarifying rules on stair/hand rails and ladders.

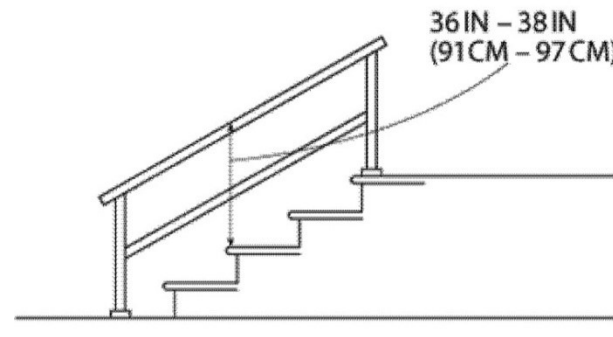
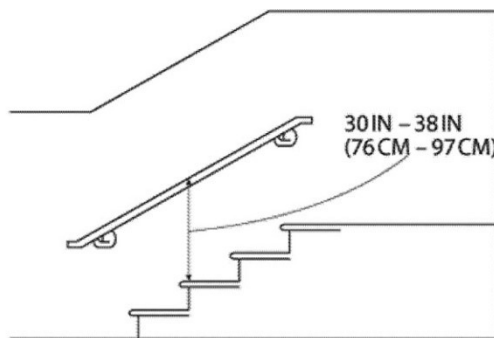
NGFA | 1400 Crystal Drive | Suite 260 | Arlington | VA | 22202



VII. Guardrails, Handrails, and Stair Rails Cont.

Handrails and Stair Rails Systems – 1910.29(f) – Continued

- Handrails and stair rail systems are smooth-surfaced to protect employees from injury, such as punctures or lacerations, and to prevent catching or snagging of clothing.
- No opening in a stair rail system exceeds 19 inches at its least dimension.
- Handrails have the shape and dimension necessary so that employees can grasp the handrail firmly.
- The ends of handrails and stair rail systems do not present any projection hazards.
- Must withstand a force of at least 200 pounds applied in any downward or outward direction within 2 inches of any point along the top edge of the rail.



VII. Guardrails, Handrails, and Stair Rails Cont.

Protection From Falling Objects – 1910.29(k) - Toeboards

- Erected along the exposed edge of the overhead walking-working surface for a length that is sufficient to protect employees below.
- Minimum vertical height of 3.5 inches as measured from the top edge of the toeboard to the level of the walking-working surface.
- Not have more than a 0.25 inch clearance or opening above the walking-working surface.
- Are solid or do not have any opening that exceeds 1 inch at its greatest dimension.
- Capable of withstanding a force of at least 50 pounds applied in any downward or outward direction.
- Screening is to be used where tools or objects are piled higher than the toeboard



VIII. Dockboards

- Must be capable of supporting intended load
- If put into initial service after 1/17/17, must be designed, constructed, and maintained to prevent transfer vehicles from running off dockboard edge
- When ER demonstrates there is no hazard of running off dockboard edge, ER may eliminate run-off protection
- Portable dockboards must be secured by anchoring them in place or using devices/equip to prevent from moving out of safe position unless ER demonstrates infeasibility, in which case ER must ensure there is sufficient contact between dockboard and surface to prevent movement out of safe position
- Measures (chocks, sand shoes etc.) must be used to prevent transport vehicle on which dockboard is placed from moving while EE are on dockboard
- Portable dockboards must be equipped with handholds or other means to permit safe handling of dockboards



IX. Training Requirements

This standard, 1910.30, has been given a new title under the revision to Subpart D and addresses the training requirements for all of the other standards in Subpart D. The information contained in this standard is all new and employers are now required to comply with these training requirements. These new standard requirements are as follows:

Fall hazards – 1910.30(a)

- 1910.30(a)(1) - Before any employee is exposed to a fall hazard, the employer must provide training for each employee who uses personal fall protection systems or who is required to be trained as specified elsewhere in this Subpart. Employers must ensure employees are trained in the requirements of this paragraph on or before May 17, 2017.
- 1910.30(a)(2) - The employer must ensure that each employee is trained by a qualified person.
- 1910.30(a)(3) - The employer must train each employee in at least the following topics:
 - 1910.30(a)(3)(i) - The nature of the fall hazards in the work area and how to recognize them;
 - 1910.30(a)(3)(ii) - The procedures to be followed to minimize those hazards;
 - 1910.30(a)(3)(iii) - The correct procedures for installing, inspecting, operating, maintaining, and disassembling the personal fall protection systems that the employee uses; and
 - 1910.30(a)(3)(iv) - The correct use of personal fall protection systems and equipment specified in paragraph (a)(1) of this section, including, but not limited to, proper hook-up, anchoring, and tie-off techniques, and methods of equipment inspection and storage, as specified by the manufacturer.



IX. Training Requirements Cont.

Equipment Hazards – 1910.30(b) – On or before May 17, 2017, the employer “must” train each employee;

- 1910.30(b)(1) - in the proper care, inspection, storage, and use of equipment covered by this Subpart before an employee uses the equipment.
- 1910.30(b)(2) - who uses a dockboard to properly place and secure it to prevent unintentional movement.
- 1910.30(b)(3) - who uses a rope descent system in proper rigging and use of the equipment in accordance with 1910.27.
- 1910.30(b)(4) - who uses a designated area in the proper set-up and use of the area.

Retraining – 1910.30(c) –Must retrain when;

- 1910.30(c) - the employer has reason to believe the employee does not have the understanding and skill required by paragraphs (a) and (b) of this section. Situations requiring retraining include, but are not limited to, the following:
 - 1910.30(c)(1) - changes in the workplace render previous training obsolete or inadequate;
 - 1910.30(c)(2) - changes in the types of fall protection systems or equipment to be used render previous training obsolete or inadequate; or
 - 1910.30(c)(3) - inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee no longer has the requisite understanding or skill necessary to use equipment or perform the job safely.



IX. Training Requirements Cont.

Training Must be Understandable – 1910.30(d)

- 1910.30(d) - The employer must provide information and training to each employee in a manner that the employee understands.



Employer Training Requirements

- Any time a new method or system of protection is introduced at your organization, all employees that will be working in and around this system must be adequately trained – in each specific device and/or method. **General fall protection training will not suffice.** The training will need to be specific and needs to be done immediately prior to implementation of any new systems.



Employer Training Requirements

- The employer must train each employee in at least the following topics:
 - The nature of the fall hazards in the work area and how to recognize them;
 - The procedures to be followed to minimize those hazards;
 - The correct procedures for installing, inspecting, operating, maintaining, and disassembling the personal fall protection systems that the employee uses



Employer Training Requirements

- 1910.30 Training Requirements: Ensure workers who use fall protection and work in high hazard areas are trained and retrained (as needed) about fall hazards and equipment, and the proper use of FPSs.
- Trainer must be a **qualified** person and is responsible for training employees how to:
 - Identify and minimize fall hazards
 - Use personal FPSs and RDSs
 - Maintain, inspect, & store fall protection equipment or systems
- May overlap with 1910.132 PPE Training Requirements but training will be sufficient to satisfy both standards.



Walking-Working Surfaces and Personal Fall Protection Systems Final Rule

Frequently Asked Questions

The intent of OSHA's Walking-Working Surfaces standard, 29 CFR Part 1910, Subpart D & I, is to increase the protection of general industry employees and employers from hazards associated with walking-working surfaces. The rulemaking will significantly reduce the number of worker deaths and injuries that occur each year resulting from workplace slip, trip, and fall hazards. The final rule was published on November 18, 2016, and became effective on January 17, 2017. Some requirements in the final rule have compliance dates after the effective date and will be discussed in further detail below. This final rule and the associated preamble, providing more detailed explanation of the rule, is available on the Federal Register website at [81 FR 82494, Walking-Working Surfaces; Personal Protective Equipment; Final Rule, November 18, 2016](#).

OSHA requirements are set by statute, standards, and regulations. The Agency's interpretations explain these requirements and how they apply to particular circumstances, but they do not create additional employer obligations. Note that our enforcement guidance may be affected by legislative or rulemaking changes to OSHA requirements. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

This webpage provides guidance, in a question and answer format, regarding OSHA's Final Rule, Walking-Working Surfaces and Personal Protective Equipment, 29 CFR Part 1910, Subpart D and I. These Frequently Asked Questions (FAQs) are divided into five sections: *general questions*, *rope descent system (RDS) questions*, *outdoor advertising questions*, *residential roof questions*, and *agricultural operation questions*.

General

What is the purpose of the final rule?

How does the final rule increase worker protection?

What benefits does the final rule provide for employers?

Who and what does the final rule cover?

What are the major changes in the final rule?

When does the final rule become effective?

Will states with OSHA-approved programs adopt the standards?

What resources are available to help small businesses and other employers comply with the standards?

Rope Descent Systems

What is a rope descent system (RDS)?

X. Frequently Asked Questions

Who is qualified to certify the anchorage points?

- In the final rule, “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.

What is a prompt rescue?

- Prolonged suspension from fall arrest systems can cause orthostatic intolerance, which, in turn, can result in serious physical injury, or potentially, death. Research indicates that suspension in a fall arrest device can result in unconsciousness, followed by death, in less than 30 minutes (SHIB 03-24-2004). In summary, prompt rescue means employers must be able to rescue suspended workers quickly enough to ensure the rescue is successful, *i.e.*, quickly enough to ensure that the employee does not suffer physical injury (such as injury or unconsciousness from orthostatic intolerance) or death.



X. Frequently Asked Questions Cont.

What type of repair will require me to replace the cage with a ladder safety device?

- 1910.28(b)(9)(i)(C) does not require that employers install ladder safety or personal fall arrest systems when they make minor repairs to fixed ladders, cages, or wells, such as replacing a bolt or repairing a weld on a cage. However, when employers determine that they cannot simply make a repair to a section or a portion of a section of a fixed ladder, cage, or well but must replace that portion or section, employers must ensure the replacement is equipped with a ladder safety or personal fall arrest system. The final rule does not require employers to install a ladder safety or personal fall arrest system on the entire fixed ladder when a portion of one section needs replacement. For example, only part of a 50-foot section of a cage, well or multi-section ladder might need replacement because of damage. 1910.28(b)(9)(i)(C) only requires that the employer replace that 50-foot section of the ladder, cage, or well with a ladder safety system or personal fall arrest system, not all sections.



X. Frequently Asked Questions Cont.

Since I no longer need cages and rest platforms, what are the requirements for a one section fixed ladder?

- 1910.29(b)(9)(ii) adds new requirements for one-section fixed ladders that are equipped with personal fall arrest systems or ladder safety systems and fixed ladders equipped with those systems on more than one ladder section. For these ladders, the final rule requires that employers ensure:
- 1910.28(b)(9)(ii)(A) - The personal fall arrest or ladder safety system provides protection throughout the entire vertical distance of the ladder, including all ladder sections and;
- 1910.28(b)(9)(ii)(B) - The ladder has rest platforms provided at least every 150 feet.

[OSHA's WWS](#)

[OSHA's WWS FAQ Section](#)

Now it's your turn!



Thank You

National Grain and Feed Association

1400 Crystal Drive

Suite 260

Arlington, VA 22202

Jim Seibert

(202) 289-0873 | jseibert@ngfa.org

