AIHA 1st Quarter Meeting

Subparts "D" and "I"
Walking-Working Surfaces &
Personal Protective Equipment
(Personal Fall Protection) Final Rule

Doug Huddleston, CSP
OSHA Region VI
Cooperative and State Programs

March 1, 2017
Objectives

- Describe the background of this rule making process
- Explain the benefits of the new rule, including major changes from the existing rule
- Recognize compliance/effective dates of new standard
- List the tools/resources available upon rule becoming effective
Subpart D and I - Background & History

Notice of Proposed Rulemaking

- Initial Rule promulgated in 1971
- OSHA issued a Notice of Proposed Rulemaking in 1990
- OSHA issued a second Notice of Proposed Rulemaking in 2010
- Rule was submitted to Office of Information and Regulatory Affairs (OIRA) July 02, 2015 and was concluded on December, 21, 2015
- Rule was published November 18, 2016 and was Final on January 17, 2017
Purpose of the Updates

Notice of Proposed Rulemaking

- To update the outdated Subpart D standard, incorporating new technology and industry practices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
The "Who," "What," and the "Why"

- OSHA estimates 6.9 million general industry establishments employing 112.3 million workers will be affected - occupations ranging from painters to warehouse workers.

- OSHA estimates that, on average, approximately 202,066 serious (lost-workday) injuries and 345 fatalities occur annually among workers directly affected by the final standard.

Why was the Rule Needed?

- Falls from heights and on the same level (a working surface) are among the leading causes of serious work-related injuries and deaths.
Benefits of the Updated Rule

- 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)
### Net Benefits of the Final Revision to OSHA's Walking-Working Standards

<table>
<thead>
<tr>
<th>Net Benefits of the Final Revision to OSHA's Walking-Working Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annualized Costs</strong></td>
</tr>
<tr>
<td>§1910.22 – General Requirements</td>
</tr>
<tr>
<td>§1910.23 – Ladders</td>
</tr>
<tr>
<td>§1910.24 – Stepbolts and Manhole Steps</td>
</tr>
<tr>
<td>§1910.27 – Scaffolds and Rope Descent Systems</td>
</tr>
<tr>
<td>§1910.29 – Fall Protection Systems and Falling Object Protection – Criteria and Practices</td>
</tr>
<tr>
<td>§1910.30 Training Requirements</td>
</tr>
<tr>
<td>§1910.132 – General Requirements</td>
</tr>
<tr>
<td>§1910.140 – Personal Fall Protection Systems</td>
</tr>
<tr>
<td>Rule Familiarization</td>
</tr>
<tr>
<td><strong>Total Annual Costs</strong></td>
</tr>
<tr>
<td><strong>Annual Benefits</strong></td>
</tr>
<tr>
<td>Number of Injuries Prevented</td>
</tr>
<tr>
<td>Number of Fatalities Prevented</td>
</tr>
<tr>
<td><strong>Monetized Benefits – (assuming $62,000 per injury and $8.7 million per fatality prevented)</strong></td>
</tr>
<tr>
<td>OSHA Standards that are updated and consistent with voluntary standards</td>
</tr>
<tr>
<td><strong>Net Benefits (benefits minus costs)</strong></td>
</tr>
</tbody>
</table>

Source: U. S. Department of Labor, OSHA, Directorate of Standards and Guidance, Office of Regulatory Analysis-Safety
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 **
## Delayed Compliance Dates

<table>
<thead>
<tr>
<th>Final Subpart D Section and Requirement</th>
<th>Compliance Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>§1910.27(b)(1) – Certification of anchorages</td>
<td>November 20, 2017</td>
</tr>
<tr>
<td>§1910.28(b)(9)(i)(A) - Deadline by which employers must equip existing fixed ladders with a cage, well, ladder system, or personal fall arrest system.</td>
<td>November 19, 2018</td>
</tr>
<tr>
<td>§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 (PFAS)</td>
<td>November 19, 2018</td>
</tr>
<tr>
<td>§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 (PFAS)</td>
<td>November 18, 2036</td>
</tr>
<tr>
<td>§1910.30(a) and (b) – Deadline by which employers must train employees on fall and equipment hazards</td>
<td>May 17, 2017</td>
</tr>
</tbody>
</table>
§1910.23 – Ladders

Portable Ladders
- Consolidates and simplifies rules into general requirements, portable ladders, fixed ladders, and mobile ladder stands
- Requires inspection before use (§ 1910.23(b)(9));

Portable Ladders - Ladder that can readily be moved or carried, and usually consists of side rails joined at intervals by steps, rungs, or cleats:

Discussion - OSHA adopted the construction standard requirement which includes all portable ladders (supporting & non) ANSI A14.1 & 14.2–2007 (Section 8.3.4), wood and metal portable ladders.
- OSHA deleted the language “rear braces” to avoid confusion about what constitutes a portable ladder - (describing a type of ladder vs. the component of a ladder) - A component "crosspieces or diagonals" affixed to back section of self supporting ladder, not intended for climbing.

Stepstools - Limited to those ladders that are not height adjustable, do not have a pail shelf, and do not exceed 32 inches (81 cm) in overall height to the top cap, except that side rails may continue above the top cap (definition §1910.21(b)).
- Steps on stepstools not spaced less than 8 inches (20 cm) apart and not more than 12 inches (30 cm) apart - have minimum clear width 10.5 inches (26.7 cm) (§ 1910.23(b))
Ladder Use - Fatal Incident

April 30, 2016 - Dallas, Texas
A North Texas painting contractor (NAICS 238320 - Painting and Wall Covering Contractors) had an employee working from an extension ladder painting the side of a commercial building. The employee was a 61 year old male.

Ladder slid out from under employee - Employee fell an approximate 20 feet, suffering head and torso trauma, which fatally injured him.

Some Extension Ladder Hazards:
- Footing Pads not deployed correctly
- Surface not level - loose gravel, etc.
- Workers not trained on proper erection
- Competent Person did not ensure an inspection was performed

May 11, 2016 - Azle, Texas
A 64 year old male employee of an communications contractor (NAICS 517919 - All Other Telecommunications) was working from a platform that was attached to a ladder, splicing a cable. The employee fell to the ground while descending the ladder, striking his head, and becoming fatally injured.
§1910.23 – Ladders

Updates and makes rule consistent with current national consensus standards.


Source: Pinterest – #safety #fall

Fig. 4: Examples of Mobile Ladder Stand Platforms

Mobile Ladder Stand
§1910.24 – Stepbolts and Manhole Steps

Stepbolt (pole step) - means a bolt or rung attached at intervals along a structural member used for foot placement and as a handhold when climbing or standing.

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

Discussion - The final rule defines “fixed ladder” as a ladder, with side rails or individual rungs, that is permanently attached to a structure, building or equipment (§ 1910.21(b)). Fixed ladders do not include ship stairs, stepbolts, or manhole steps. Final paragraph (d)(1), like the proposed rule, establishes a performance-based provision requiring that employers ensure any fixed ladder a worker uses is capable of supporting the maximum intended load.

Manhole Steps - Initially included in "Individual-Rung Ladder" section - Although manhole steps have individual rungs, they involve unique conditions - OSHA addresses these in a separate section of §1910.24
§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

Some Changes –

- The final §1910.25 is titled “Stairways,” which replaces the “Fixed Industrial Stairs” title in the pre-existing rule.

Some Examples of Updated Changes:
In the final §1910.25 rule, OSHA uses the term, “standard stairs,” that § 1910.21(b) defines as “a fixed or permanently installed stairway.” OSHA explained that “fixed industrial stairs” was the "rule" term in use in 1971 (ANSI A64.1–1968 (now A1264.1–2007)).

- **Spiral Stairs** - §1910.25(d)(1) - Have a minimum clear width of 26 inches; (2) Have maximum riser height of 9.5 inches; (3) Have a minimum headroom above stair treads of at least 6 feet, 6 inches; (4) Have a minimum tread depth of 7.5 inches; (5) Have a uniform tread size.
§1910.25 – Stairways

Stairway Components - Handrails & Stair Rails - The proposed rule borrowed from the construction standard (§ 1926.1050(b)) - the final rule (1910.21) defines a handrail as a rail used to provide workers with a handhold for support. Handrails may be horizontal, vertical, or sloping. The new rule aligns with ANSI/ASSE A1264.1–2007 (2.6 and 2.7), handrails part of a stair rail/stair rail system (i.e. top rail).

Figure D-12 – Handrail Measurement

Figure D-13 – Combination Handrail Measurement

Some Changes - Handrails & Stair Rails

- The final definition simplifies and consolidates the three previous definitions of “handrail” into one term;
- The final definition deletes existing specifications for the materials (e.g., pipe, bar) that employers must use for handrails;
- The height of stair rail systems installed before January 17, 2017 is not less than 30 inches (76 cm) 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 (107 cm) from the leading edge of the stair tread to the top surface of the top rail **(now contained in 29 CFR 1910.29(b)(1))**
§1910.25 – Stairways

Stairway Components - Risers - In the final rule, the term "Riser" means an upright (vertical) or inclined member of a stair located at the back of a stair tread or platform that connects close to the front edge of the next higher tread, platform, or landing.

Changes & Discussion - During the open comment period, discussion ensued regarding clarification on riser height and orientation.

**Group consensus:** The final definition is consistent with ANSI/ASSE A1264.1–2007 (Section 2.17).

Disposition - The final rule differs from the proposed definition in that the final definition clarifies that risers may also be inclined (nearly vertical), as well as vertical, members of a stair, and connect treads to the next higher tread, platform or landing.

- The height of a riser is measured as the vertical distance from the tread (horizontal surface) of one step to the top of the leading edge of the tread above it (see Figure D–8.).

![Figure D-8 – Dimensions of Standard Stairs](image)
§1910.25 – Stairways

Stairways vs. Ramps - The final rule defines ramp as an inclined walking-working surface that is used to gain access to another level. Employers use ramps to move workers, equipment, materials, and supplies.

- Ramps also allow workers to access another level when stairs are not available or workers cannot use them (such as for workers who use wheelchairs).

Some Changes -

Ramps - The final rule revises the proposed definition for two (2) reasons:

- First, the proposed definition only refers to the passage of employees and vehicles, but not other things that may be moved across ramps, such as materials, supplies, and equipment. The final definition does not limit the use of ramps as passageways;

- Second, the final rule simplifies the proposed definition to make it consistent with the definition in ANSI/ASSE A1264.1–2007 (Section 2.16).
Updates requirements for dockboards

Adds design and construction requirements to prevent equipment from going over the dockboard edge

**Example of Changes:** The final rule updates the existing requirements for dockboards (§ 1910.30(a)):

- Deleted existing requirement to conform to "design and construction" requirements of the 1961 Department of Commerce (DOC) "Industrial Lifts and Hinged Loading Ramps" Commercial Standard (CS202–56).
- ANSI/ITSDF B56.1 (2012) and other recently updated national consensus standards (MH30-2) supersede the DOC standard.

“Dock Creep” can occur due to repetitive PIT movement and/or improper Plate installation.
**§1910.27 – Scaffolds and Rope Descent Systems (RDS)**

**Rope descent system** - In the final rule, a rope descent system (RDS) is defined as a suspension system that allows a worker to descend in a controlled manner and, as needed, to stop at any time during the descent.

**Anchorages** - §1910.27(b)(1)(i) - Before any rope descent system is used, the building owner must inform the employer, in writing that the building owner has identified, tested, certified, and maintained each anchorage so it is capable of supporting at least 5,000 pounds (268 kg), in any direction, for each employee attached - (based on Annual inspection by qualified person and certification at least every 10 years).

§1910.27(b)(2)(i) - No rope descent system is used for heights greater than 300 feet (91 m) above grade unless the employer demonstrates that it is not feasible to access such heights by any other means or that those means pose a greater hazard than using a rope descent system;

§1910.27(b)(2)(ii) - The rope descent system is used in accordance with instructions, warnings, and design limitations set by the manufacturer or under the direction of a qualified person;

§1910.27(b)(2)(iii) - Each employee who uses the rope descent system is trained in accordance with § 1910.30.
§1910.27 – Scaffolds and Rope Descent Systems (RDS)

- Requires that employers using scaffolds follow the construction standard – “Scaffolds used in general industry must meet the requirements in 29 CFR part 1926, subpart L (Scaffolds).”

- Requires certification of anchorages starting one (1) year after final rule published

- Requires RDS have separate fall arrest system

**Anchorage** is a *new term* added to the final rule.

- Defined as a secure point of attachment for equipment such as lifelines, lanyards, deceleration devices and rope descent systems. Also defined as a component of a *fall protection system*.

- OSHA drew the term and definition for “anchorage” from §1910.140, Personal fall protection systems - Also from the definition in ANSI/ASSE A10.32–2012 (Section 2.4) and ANSI/ASSE Z359.0–2012 (Section 2.5).
Consolidates general industry fall protection requirements into one section - **OSHA patterned this section after the construction fall protection standard (29 CFR 1926.501, Duty to have Fall Protection).

Makes requirements and format consistent with construction standard - **Existing 1910 rule mandated the use of "guardrail systems" - Final rule allowed use of conventional fall protection systems

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 and Falling Object Protection

§1910.28(a) Duty to have fall protection and falling object protection - (2)-Does not apply to: (i) Portable ladders; (ii) When - Employers are inspecting, investigating or assessing workplace conditions or work to be performed prior to the start of work, or after all work has been completed. **However, this exception does not apply when fall protection systems or equipment meeting the requirements of §1910.29 have been installed and are available for workers to use. If fall protection systems are present, workers must use them while conducting pre-work and post-work inspections, investigations, or assessments of workplace conditions.

Discussion - OSHA entertained input from groups, such as The American Insurance Association and others expressing interest in the exception similar to §1926.501(a)(1)

Changes included in §1910.28 - Duty to have fall protection and falling object protection

(10) Outdoor advertising (billboards) - (i) The requirements in paragraph (b)(9) of this section, and other requirements in Subparts D and I of this part, apply to fixed ladders used in outdoor advertising activities.

(ii) When an employee engaged in outdoor advertising climbs a fixed ladder before November 19, 2018 that is not equipped with a cage, well, personal fall arrest system, or a ladder safety system the employer must ensure the employee:

(A) Receives training and demonstrates the physical capability to perform the necessary climbs in accordance with §1910.29(h);

(B) Wears a body harness equipped with an 18-inch (46 cm) rest lanyard;

(C) Keeps both hands free of tools or material when climbing on the ladder; and

(D) Is protected by a fall protection system upon reaching the work position.
Walking-Working Surfaces - Accident

August 12, 2016 - Hamilton, Texas

A 42 year old male employee of a roofing contractor (NAICS 236115 - New Single-Family Housing Construction) was working, installing a metal roof. The employee worked from a board that he was using as a walking surface. As the worker walked along the board, the board slid from under him. The worker then slid off the roof and fell from the roof structure.

- Employee fell an approximate 13 feet, sustaining fracture injuries to his hip and ribs.

Some Walking-Working Surface Hazards:
- Failure to ensure walking-working surface is adequately constructed
- Failure to have Competent Person inspect equipment
- Failure to ensure workers are protected from falls:
  - Personal fall arrest systems;
  - Guardrails; or
  - Ladders

August 11, 2016 - Plano, Texas

A 25 year old male employee of an roofing contractor (NAICS 238160 - Roofing Contractors) was working on the roof of commercial building when the deck he was walking on gave way, causing him to fall approximately 15 feet to the second floor level below. The employee sustained a broken arm, fractured pelvis, and a severe back injury.
§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
- Covers

- Cages and wells
- Ladder safety systems
- Toeboards
Guardrail Systems - means a barrier erected along an unprotected or exposed side, edge, or other area of a walking-working surface to prevent workers from falling to a lower level - can be either permanent or removable.

Discussion of Rolling stock and motor vehicles - A Committee was formed and discussion ensued - "Cargo Tank Risk Management Committee" - Some advocated for and some not, in regards to fall protection systems on tanker cars. Then, there was jurisdictional issues,,, i.e. Federal Railroad Administration (FRA) and Federal Motor Carrier Safety Administration (FMCSA),,, with the latter (FMCSA) being the determining factor - The Idea of utilizing new tech,,,,, "Collapsible" hand/guardrails was entertained.

Handrail(s) - The final rule, like the proposed rule and the construction stairways standard (§ 1926.1050(b)), defines a handrail as a rail used to provide workers with a handhold for support. Handrails may be horizontal, vertical, or sloping. According to ANSI/ASSE A1264.1–2007 (Sections 2.6 and 2.7), handrails also may be part of a stair rail or stair rail system (i.e., the top rail).
Walking-Working Surfaces - Accident

November 22, 2016 - Fort Worth, Texas

A 60 year old male employee of a product distribution center (NAICS 424720 - Petroleum and Petroleum Products Merchant Wholesalers) was loading a drum of product onto the drum dolly when his feet slipped (lost his balance). When the employee slipped, his feet went out from underneath him on the lift gate, causing him to fall approximately 5 feet to the ground below, and he landed on his head.

- Employee fell approximately **five (5) feet** - Employee suffered severe head trauma and was in a coma for 3 weeks.
October 24, 2016 - Fort Worth, Texas

A 29 year old male employee of a retail electronic store (NAICS 443112 - Radio, Television, and Other Electronics Stores) used an "Order Picker" (elevating work platform) to enable retrieval of merchandise from the upper level of an industrial steel shelving unit.

The employee then dismounted the walking-working surface of the lift, and climbed onto the shelving unit's top level. Upon accessing the top level, the employee slipped and lost his balance. The employee was not protected from falling by the use of PFAS.

- Employee fell approximately **12 feet** - Employee suffered head and back trauma and was hospitalized for concussion observation and treatment.
§1910.29 – Fall Protection Systems Criteria

**Designated Areas** - This term means a distinct portion of a walking-working surface delineated by a warning line in which work may be performed without additional fall protection. Examples of additional fall protection include guardrails, safety nets, and personal fall protection systems. As mentioned in the proposed rule and in the discussion of final §1910.28(b)(13), a designated area is considered to be a non-conventional fall protection method.

The final rule allows employers to use designated areas for work on low-slope roofs (final § 1910.28(b)(13)):

- The concept of a designated area in the final rule is similar to controlled access zones and warning line systems in OSHA’s construction fall protection standards (§§ 1926.500(b) and 1916.502(g) and (h)), which also do not require the use of conventional fall protection in specified situations.

*Warning line, being used in a Fall Protection Plan*
Safety Nets - §1910.28 allows employers to use safety net systems to protect workers on several types of elevated walking-working surfaces, including unprotected sides and edges, wall openings, and low-slope roofs.

Improvements - To ensure that the requirements for safety net systems used in general industry are consistent with, and are as protective as, the construction requirements, OSHA requires employers working in general industry to follow the construction criteria and practice requirements for safety net systems.

Exceptions - The final rule does not permit employers to use safety nets or personal fall arrest systems when workers are less than four feet above dangerous equipment.

Platform nets – A few groups raised the issue to the validity of using platform nets, not only as a "working platform" but also as a means for catching falling equipment.

- The new rule does not prohibit the use of platform nets - however, if employers also use platform nets for fall protection, the nets must meet the criteria and practice requirements in the construction fall protection standard - §1926 - Subpart M.
§1910.29 – Fall Protection Systems Criteria

Covers - Each employee should be protected from falling through any hole (including skylights) that is 4 feet (1.2 m) or more above a lower level.

§1910.28(b)(3)(iii), as an example, additionally addresses the use of “covers:”

- Each employee is protected from falling into a stairway floor hole by a fixed guardrail system on all exposed sides, except at the stairway entrance.

- However, for any stairway used less than once per day where traffic across the stairway floor hole prevents the use of a fixed guardrail system (e.g., holes located in aisle spaces), the employer may:

  - Protect employees from falling into the hole by using a hinged floor hole cover that meets the criteria in §1910.29 and a removable guardrail system on all exposed sides, except at the entrance to the stairway.
A 45 year old male employee of a framing contractor (NAICS 238130 - Framing Contractors) - was in the process of framing a new residential home under construction. The victim was in close proximity to an open skylight. The victim was not protected from falling into the opening by a screen or standard railing, or by a personal fall arrest system. The victim fell through the skylight.

- Employee fell an approximate 15 feet, suffering head trauma, and was fatally injured.
§1910.29 – Fall Protection Systems Criteria

Cages and wells - "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.

- "Well" means a permanent, complete enclosure around a fixed ladder. A well surrounding a fixed ladder must provide sufficient clearance to enable the employee to climb the ladder.

- The terms “well” and “cage” typically are used together because the structures serve the same purpose, i.e., to enclose the climbing area of a fixed ladder.

- In the event of a fall, wells and cages contain workers within the enclosure and direct them to a lower landing (Ex. 198). ANSI A14.3–2008 (Section 3) also contains a similar definition.

Discussion & Changes - The final rule deleted proposed language stating that “proper clearances for a well provide the person climbing the ladder the same protection as a cage” to prevent employers and workers from mistakenly believing that wells and cages provide fall protection. Information in the record indicates that wells and cages do not protect workers from falling; as a result, the final rule in § 1910.28(b)(9) phases out their use as fall protection systems.
Ladder Safety Systems - In the final rule, a ladder safety system is a system designed to eliminate or reduce the possibility of falling from a ladder. The final definition explains that a ladder safety system usually consists of:

- A carrier;
- A safety sleeve;
- The safety sleeve is a moving component that travels on the carrier; a lanyard; connectors; and a body harness.
- The final definition also specifies that cages and wells are not ladder safety systems.

The existing rule in § 1910.21(e)(13) uses a similar term, “ladder safety device,” which also excludes ladder cages and wells. OSHA’s construction ladder standard in § 1926.1053 uses the same term, but does not include a definition of the term. The final definition is consistent with the ANSI fixed-ladder standard (ANSI A14.3–2008; Section 3).
Fixed vs. Portable Ladders - "Well" means a permanent, complete enclosure around a fixed ladder. A well surrounding a fixed ladder must provide sufficient clearance to enable the employee to climb the ladder.

Ladder Safety Devices - Consists of the following:

- A carrier, also called “a lifeline,” which is a rigid or flexible track attached to or adjacent to the fixed ladder;
- A “safety sleeve,” which is moving component that travels on the carrier;
- A lanyard;
- Connectors; and
- A body harness

- Increasingly, there is more mention of an emphasis among manufacturers, to begin to design fall arrest, positioning systems and ladder safety devices into fixed ladder applications.
Positioning Devices - 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."

Example: Whenever the worker leans back, the system is activated. However, the personal positioning system is not specifically designed for fall arrest purposes.

Discussion - OSHA received one comment on the definition of ladder safety system. The American Society of Safety Engineers (ASSE), urged OSHA to prohibit the use of body belts in ladder safety systems - OSHA agreed - with the final rule in §1910.140(d)(3) retaining OSHA’s 1998 prohibition on the use of body belts as part of a personal fall arrest system.

- Specifically, use of positioning devices are addressed in 29 CFR part 1910.140(e).
Travel Restraint System - A type of personal fall protection system used to limit a worker’s travel to prevent exposure to a fall hazard. This definition is new in the final rule. This system is 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 a worker going over the edge of a walking-working surface.

Unlike personal fall arrest systems, travel restraint systems do not support the worker’s weight. Rather, the purpose of these systems is to prevent workers from reaching the fall hazard, such as an unprotected side or edge (final §1910.140(b)).

Disposition - With the updated rule, OSHA has provided employers more flexibility on the use of fall protection, specifically, "the proper use of personal fall arrest systems or travel restraint systems.” This provision means that:

- Employers may omit a guardrail on one side of a special purpose runway (walking surface >18-inches) only when the employer both provides and ensures that each worker properly uses a personal fall arrest system or travel restraint system.
§1910.140 – Personal Protective Equipment (Personal Fall Protection Systems)

Changes to §1910.140 adds definitions for personal fall protection systems - Examples:

- **Competent Person** – (§1910.140 Personal fall protection systems) 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 authorization to take prompt, corrective action to eliminate the identified hazards.

- **Competent Person** - (§1926.32(f) "General S&H Provisions") - means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

- **Belt Terminal** - this term means an end attachment of a window cleaner’s positioning system used to secure the body harness or belt to the window cleaner’s belt anchor.

**Discussion leads to efforts towards Compliance Assistance** - OSHA also added two non-mandatory appendices that provide information to help employers select, test, use, maintain, and inspect personal fall protection equipment (Appendix C) and examples of test methods for personal fall arrest and positioning systems to ensure that they meet the requirements of § 1910.140 (appendix D).

**Uniformity** - In the final rule, OSHA adapted many provisions from its other fall protection standards, primarily Powered Platforms for Building Maintenance (29 CFR 1910.66, appendix C); Personal Fall Arrest Systems in Shipyard Employment (29 CFR 1915.159); Positioning Device Systems in Shipyard Employment (29 CFR 1915.160); and Fall Protection in Construction (29 CFR part 1926, Subpart M). These adaptations ensure that OSHA fall protection rules are consistent across various standards.

---

**1910 Subpart “I” Appendix “C” – Non Mandatory Compliance PPE Selection**

- Inspection considerations. Personal fall protection systems must be inspected before initial use in each work area component with damage, such as cuts, abrasion, mold or evidence of undue stretching, an alteration or addition that might affect its efficiency, damage due to deterioration, fire, acid, or corrosive damage, detached hooks or faulty hook springs, threads that are pulled through the shoulder of bolts, lines or slings, ungrounding, or wear, or alteration that is not authorized, shall be removed from service immediately. Each component of the system, including components, subjected to impact loading must be removed from service immediately and not used until a competent person inspects the system and determines that it is a safe and safe-to-use for personal fall protection.

- Rescue considerations. As required by §1910.138(b), when personal fall arrest systems are used, special consideration must be given to ensuring an employee properly shall fall arrest. The suitability of rescue equipment, hitches, or other rescue equipment needed to be evaluated in the event of failure, as well as to ensure that the employee is not in the system at the time of the fall or that the employee can be rescued. In some situations, equipment allowing employees to rescue themselves after the fall has occurred may be desirable, such as devices that can be activated by the user.

**1910 Subpart “I” Appendix “C” – Inspection Considerations**

- Tool manufacturers and employers should ensure that the strength of a personal fall arrest system based on its being stressed is an anchoring system that can support the system. Therefore, if a means of attachment is used that will reduce the strength of the system (such as an eye bolt in the anchoring anchor), the component should be replaced by a stronger one that will meet the appropriate maximum design load considerations. The following are a list of situations in which employees and employers should be especially cautious:

- The tool manufacturer or employer should ensure that the strength of the personal fall arrest system is based on its being stressed by an anchoring system that can support the system. Therefore, if a means of attachment is used that will reduce the strength of the system, the component should be replaced by a stronger one.

---

**1910 Subpart “I” Appendix “C” – Non Mandatory Compliance PPE Selection**

- Inspection considerations. Personal fall protection systems must be inspected before initial use in each work area component with damage, such as cuts, abrasion, mold or evidence of undue stretching, an alteration or addition that might affect its efficiency, damage due to deterioration, fire, acid, or corrosive damage, detached hooks or faulty hook springs, threads that are pulled through the shoulder of bolts, lines or slings, ungrounding, or wear, or alteration that is not authorized, shall be removed from service immediately. Each component of the system, including components, subjected to impact loading must be removed from service immediately and not used until a competent person inspects the system and determines that it is a safe and safe-to-use for personal fall protection.

- Rescue considerations. As required by §1910.138(b), when personal fall arrest systems are used, special consideration must be given to ensuring an employee properly shall fall arrest. The suitability of rescue equipment, hitches, or other rescue equipment needed to be evaluated in the event of failure, as well as to ensure that the employee is not in the system at the time of the fall or that the employee can be rescued. In some situations, equipment allowing employees to rescue themselves after the fall has occurred may be desirable, such as devices that can be activated by the user.

---

**1910 Subpart “I” Appendix “C” – Inspection Considerations**

- Tool manufacturers and employers should ensure that the strength of a personal fall arrest system based on its being stressed is an anchoring system that can support the system. Therefore, if a means of attachment is used that will reduce the strength of the system (such as an eye bolt in the anchoring anchor), the component should be replaced by a stronger one that will meet the appropriate maximum design load considerations. The following are a list of situations in which employees and employers should be especially cautious:

- The tool manufacturer or employer should ensure that the strength of the personal fall arrest system is based on its being stressed by an anchoring system that can support the system. Therefore, if a means of attachment is used that will reduce the strength of the system, the component should be replaced by a stronger one.
§1910.30 Training

Adds training and retraining requirements addressing fall hazards and equipment hazards.

Requires employers make training understandable to workers:

Examples:

§1910.30(b) - Equipment hazards:

1. The employer must train each employee on or before May 17, 2017 in the proper care, inspection, storage, and use of equipment covered by this Subpart, before an employee uses the equipment;

2. The employer must train each employee who uses a dockboard to properly place and secure it to prevent unintentional movement.

3. The employer must train each employee who uses a rope descent system (RDS) in proper rigging and use of the equipment in accordance with §1910.27.

4. The employer must train each employee who uses a designated area in the proper set-up and use of the area.

Be Understandable - OSHA borrowed this concept from the recent "Confined Spaces in Construction, Subpart AA" - Training in a language understandable to the worker.

Example:

§1910.30(d) – Personal Fall Protection System (PFPS) - if a worker has to install and disassemble personal fall protection systems (PFPS), the employer must ensure the worker knows how to perform those tasks safely and correctly before beginning the work.

Discussion on "Retraining" - OSHA received comments on several items - OSHA adopted performance-based language, which is similar to the retraining provisions in other OSHA standards, including the PPE (§ 1910.132(f)(3)), lockout/tagout (§ 1910.147(c)(7)(iii)), and powered industrial truck standards § 1910.178(l)(4)).
Resources

OSHA Hospital e-Tool – Slips, Trips and Falls

OSHA Construction e-Tool – Electrical / Falls / Stuck-by / Trenching and Excavation (Fatal 4)
Resources

OSHA Fact Sheet – Final Rule to Update General industry Walking-Working Surfaces and Fall Protection Standards

OSHA’s Final Rule to Update, Align, and Provide Greater Flexibility in its General Industry Walking-Working Surfaces and Fall Protection Standards

Background
Falls from heights and on the same level (a working surface) are among the leading causes of serious work-related injuries and deaths. OSHA estimates that, on average, approximately 202,069 serious (lost-workday) injuries and 3,459 fatalities occur annually among workers directly affected by the final standard. OSHA’s final rule on Walking-Working Surfaces and Personal Fall Protection Systems better protects workers in general industry from these hazards by updating and clarifying standards and adding training and inspection requirements. The rule affects a wide range of workers, from window washers to chimney sweeps. It does not change construction or agricultural standards.

The rule incorporates advances in technology, industry best practices, and national consensus standards to provide effective and cost-efficient worker protection. Specifically, the rule updates general industry standards addressing slip, trip, and fall hazards (1910.21), and adds requirements for personal fall protection systems (1910.130). OSHA estimates this rule will prevent 29 fatalities and 5,842 lost-workday injuries every year.

The rule benefits employers by providing greater flexibility in choosing a fall protection system. For example, it eliminates the existing mandate to use guardrails as a primary fall protection method and allows employers to choose from accepted fall protection systems they believe will work best in a particular situation — an approach that has been successful in the construction industry since 1994. In addition, employers will be able to use non-conventional fall protection in certain situations, such as designated areas on low-slope roofs.

As much as possible, OSHA aligned fall protection requirements for general industry with those for construction, easing compliance for employers who perform both types of activities.

For example, the final rule replaces the outdated general industry scaffold standards with a requirement that employers comply with OSHA’s construction scaffold standards.

The rule phases out a 1993 exception for the outdoor advertising industry that allows “qualified climbers” to forgo fall protection. At least three workers have fallen from fixed ladders under this exception. One of them died. The final rule phases in the fixed ladder fall protection requirements for employers in outdoor advertising.

Fall Protection Options
The rule requires employers to protect workers from fall hazards along unprotected sides or edges that are at least 4 feet above a lower level. It also sets requirements for fall protection in specific situations, such as on roofs, runways, areas above dangerous equipment, wall openings, repair pits, stairways, scaffolds, and scaffolding platforms. And it establishes requirements for the performance, inspection, use, and maintenance of personal fall protection systems.

OSHA defines fall protection as “any equipment, device, or system that prevents a worker from falling from an elevation or mitigates the effect of such a fall.” Under the final rule, employers may choose from the following fall protection options:
- Guardrail System – A barrier erected along an unprotected or exposed side, edge, or other area of a walking-working surface to prevent workers from falling to a lower level.
- Safety Net System – A horizontal or semi-horizontal, centilever-style barrier that uses a netting system to stop falling workers before they make contact with a lower level or obstruction.
- Personal Fall Arrest System – A system that

Walking-Working Surfaces – Hazards and Solutions
https://www.osha.gov/SLTC/walkingworkingsurfaces/hazards.html
Questions

Doug Huddleston, CSP
Huddleston.douglas@dol.gov
972-850-4167