



# HOW TO NAVIGATE OSHA FALL PROTECTION STANDARDS FOR YOUR ROOFTOP





# FALLS FROM HEIGHTS ARE A LEADING CAUSE OF FATAL WORKPLACE EVENTS AND INJURIES.

Often preventable, these incidents highlight a critical need for comprehensive fall protection measures across all industries. Despite stringent regulations and increased emphasis on safety awareness, fall protection remains the most violated Occupational Safety and Health Administration (OSHA) standard, justifying the urgency for enhanced awareness and enforcement to safeguard workers' lives and well-being.

This comprehensive guide is essential for property managers, building owners, and those responsible for ensuring workplace safety and OSHA compliance.

**By providing actionable strategies for rooftop fall protection compliance, this guide helps to promote a safer workplace environment by addressing the following key elements:**

- 1 Walking-Working Zones and Protection Requirements**  
Detailed breakdown of safety requirements for different rooftop zones.
- 2 The Hierarchy of Fall Protection**  
Exploring various levels of fall protection measures, from hazard elimination to administrative controls.
- 3 Identifying Hazards and Solutions**  
Guidance on spotting and addressing the most frequent rooftop fall risks.

**+**

**Rooftop Fall Hazard Assessment Tool**

Start your path to compliance with our practical, step-by-step guide to evaluating your building's rooftop safety.

This guide will equip you with the expertise and tools needed to enhance safety and ensure compliance in your workplace, effectively addressing the critical aspects of rooftop fall protection.

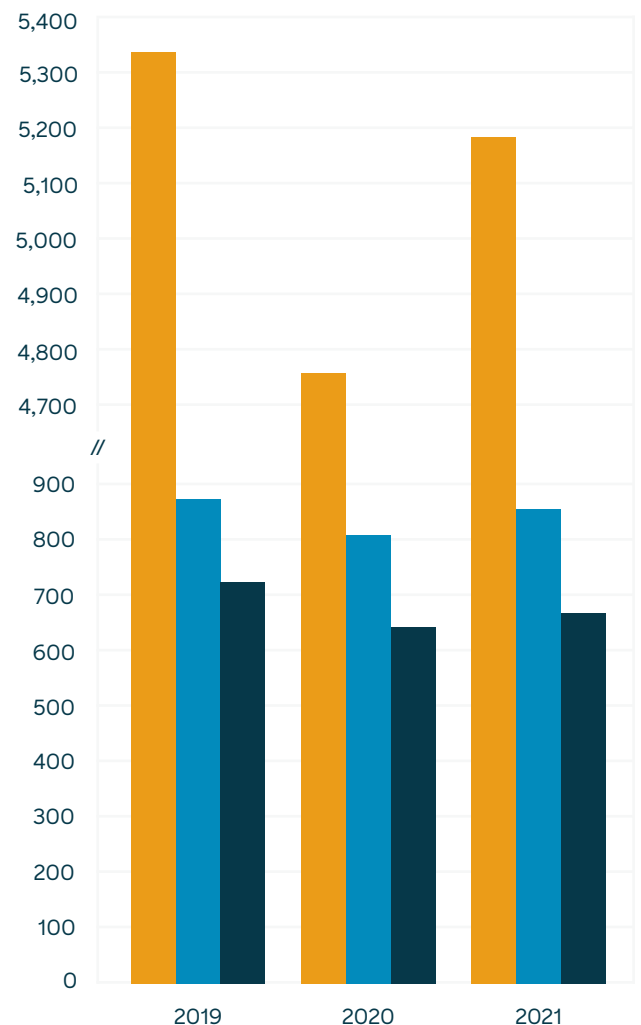


# WHY FALL PROTECTION MATTERS

Fall-related injuries and fatalities are more than just statistics; they represent lives forever altered or lost. Thousands of **workers suffer injuries** every year, resulting in life-altering consequences, including disabilities, chronic pain, and reduced quality of life. Despite progress, the ongoing issue of falls from heights points to a substantial demand for increased safety interventions.

- +** Fall Protection consistently tops the list of OSHA violations, with **7,271 citations issued in fiscal year 2023**. Citations related to ladders, scaffolding, and failure to provide proper fall protection training accounted for nearly 8,000 additional citations.
- +** Out of 5,190 fatal workplace injuries in 2021, 680 were attributed to falls from elevation, accounting for a startling **13% of all workplace deaths**.
- +** The financial implications of non-compliance are also daunting. Fines for **severe violations** can amount to \$16,131, whereas penalties for willful or repeated violations can escalate up to ten times that amount, reaching \$161,323. Failure to abate identified issues beyond the abatement date can result in daily fines of up to \$16,131.
- +** Fall-related personal injury settlements accounted for 20% of the top 20 **injury payouts** in 2023, totaling over \$22 million.

### Fall Fatalities



- Total Fatalities**
- Fatal Falls: Slips/Trips/Falls**
- Fatal Falls to Lower Level**



# WHY DO THESE INCIDENTS CONTINUE TO OCCUR?



## Inadequate Training

Insufficient training on fall protection equipment and fall hazard identification can leave workers ill-prepared and cause a lack of awareness.



## Equipment Issues & Lack of Equipment

Falls can occur due to faulty, poorly maintained, or poorly fitting fall protection equipment. Often, a walking-working surface lacks the necessary fall protection equipment, creating extra working hazards.



## Pressure to Meet Deadlines

In high-pressure work environments, workers may take shortcuts to meet deadlines, bypassing safety measures.



## Complacency

In some instances, workers become complacent over time and may neglect safety measures, thinking that accidents won't happen to them. This complacency can lead to lapses in judgment and disregard for safety protocols.

OSHA has actively pursued various initiatives to enhance awareness, drive compliance, and mitigate the risks of falls from heights in the workplace. Among these efforts is the implementation of the **National Emphasis Program** (NEP) on Falls, which strategically focuses on high-risk industries by intensifying enforcement measures.



# KEY ELEMENTS OF FALL PROTECTION

A fall hazard is any condition that exposes workers to the risk of falling from an elevation. The most common fall hazards on rooftop walking/working surfaces are unprotected edges and holes. Recognizing these hazards is the first step in mitigating risks and implementing appropriate fall protection measures.

## 1. WALKING-WORKING ZONES AND PROTECTION REQUIREMENTS

An **unprotected side or edge** is any side or edge where there is no wall or guardrail system, at least 39 inches high. Based on the distance from the unprotected edge, three zones are defined:

### **Red Zone: 0-6 ft. from the edge**

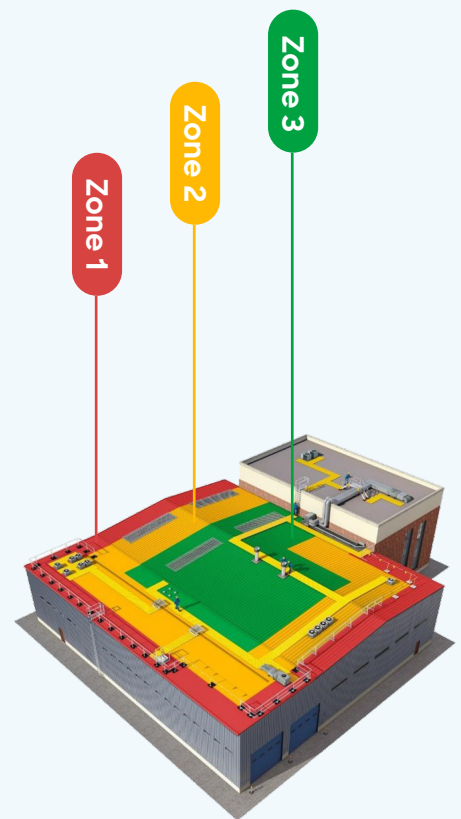
This is the most dangerous area and may require fall protection like guardrails or personal fall arrest systems.

### **Yellow Zone: 6-15 ft. from the edge**

In this zone, fall protection for infrequent and temporary work may be required.

### **Green Zone: 15 ft. & beyond from the edge**

The most common fall hazards in this area that need to be addressed are holes, including skylights, pits, open roof hatches, elevation changes, and other trip hazards. The green zone may also require a designated area to restrict access to hazardous areas.



## 2. HIERARCHY OF FALL PROTECTION

The fall protection hierarchy defines an approach to help assess compliance solutions for your building and team. Understanding the fall protection hierarchy is vital for selecting the most effective measures to protect workers.



### LEVEL 1 Hazard Elimination

The most preferred solution is to evaluate the exposure to fall hazards to determine if the hazard can be eliminated by redesigning the workspace or changing work practices to avoid the fall hazard.

### LEVEL 2 Passive Fall Protection

In this level, physical barriers are used, like guardrails around unprotected edges and covers over holes and skylights. They do not require the worker's active participation and provide a high level of safety by limiting room for user error.

### LEVEL 3 Fall Restraint Systems

These systems use personal protective equipment (PPE) when it is necessary to reach a certain area of a building or rooftop. The PPE acts to restrict the worker's range of movement so they cannot reach a fall hazard such as reaching the building's edge. Training is required to ensure proper use.

### LEVEL 4 Fall Arrest Systems

These systems are used in the red zone and typically include a full-body harness, anchorage, and a connector such as a lanyard or a lifeline to arrest a fall within acceptable force and clearance margins. Training and a rescue plan are required.

### LEVEL 5 Administrative Controls

These are the least preferred solutions and involve work practices or procedures that increase workers' awareness of a fall hazard rather than having a physical fall protection system in place. This is the least effective due to the reliance on worker behavior and compliance.





## 3. IDENTIFYING HAZARDS AND SOLUTIONS

Next, we will discuss the most common rooftop fall hazards, how to identify them, and how to start your path toward compliance. However, it is important to note that every building is unique. We recommend scheduling a fall hazard analysis by a professional like Valcourt Safety Systems, as not all solutions are one-size-fits-all.

### | ACCESSING ROOFS AND WORKING SURFACES

Providing safe access to roofs and other elevated surfaces involves a comprehensive approach that includes regular evaluation, implementing appropriate safety measures, training, and staying compliant with OSHA regulations. We have outlined the requirements for the most common methods of access: roof hatches and fixed ladders.

#### OSHA REQUIREMENTS

- **Safe Access Solutions**

Employers must ensure that workers have safe means to access any walking/working surface, including roofs, elevated platforms, and similar surfaces.

- **Designated Areas for Access**

The regulation stipulates the need for clearly designated areas for access to minimize confusion and reduce the risk of accidents.



## ROOF HATCHES

- **Guardrail and Self-Closing Gate Requirement**

OSHA mandates that every roof hatch have a guardrail and a self-closing gate. This mandate prevents falls through the hatch opening, a standard risk area for workers accessing the roof.

- **Ensuring Compliance**

Employers must ensure that their roof hatches comply with these regulations by conducting regular inspections and maintenance to keep the guardrails and gates working as intended.



## FIXED LADDERS (UNDER 24 FT.)

In addressing fixed ladders not exceeding 24 feet, [OSHA 1910.23\(b\)](#) sets forth comprehensive safety standards. Key aspects include:

- **Rung Spacing and Design**

Ladders must have parallel rungs and levels and spacing between 10 to 14 inches apart, measured center-to-center.

- **Width Requirements**

Ladder rungs and steps must have a minimum clear width of 16 inches for fixed ladders, ensuring ample space for safe footing.

- **Grab Bar Requirements**

Grab bars must extend 42 inches above the access level or landing platforms served by the ladder.

- **Material Properties**

Metal ladders should be made from corrosion-resistant materials or treated to prevent corrosion.

- **Regular Inspections and Maintenance**

Ladders must be inspected before each work shift and as necessary. Any ladder with visible defects must be tagged “Dangerous: Do Not Use” and removed from service until repaired or replaced.

- **Proper Usage**

Employees must face the ladder while climbing, use at least one hand for support, and not carry objects that could cause imbalance and falls.



## UNPROTECTED EDGES?

**OSHA 1910.28(b)(1)(i)** states that “the employer must ensure that each employee on a walking-working surface with an unprotected side or edge that is 4 feet (1.2 m) or more above a lower level is protected from falling by one or more of the following” solutions.

## SOLUTIONS & REQUIREMENTS

### Guardrail Systems

These barriers serve as crucial safeguards, preventing workers from experiencing falls to lower levels. Their installation is most effective along the perimeters of roofs or around openings. Guardrails should be 42 inches high, plus or minus 3 inches, and strong enough to withstand 200 pounds of force. Midrails or similar features are needed if there’s no tall wall. The surface should be smooth to prevent injuries. Guardrails shouldn’t overhang dangerously and should avoid certain materials like plastic or steel bands. Special safety measures are required for hoisting areas and around holes, including self-closing gates or offsets.

### Travel Restraint System

A travel restraint system includes an anchorage, anchorage connector, lanyard (or other connection means), and body support like harnesses and body belts. When used properly, this solution prevents workers from falling over the edge of a walking-working surface by limiting their movement to safe areas. This system is useful in areas where a guardrail system can not be installed, but will require extra user training and relies on the employee to properly use the system.



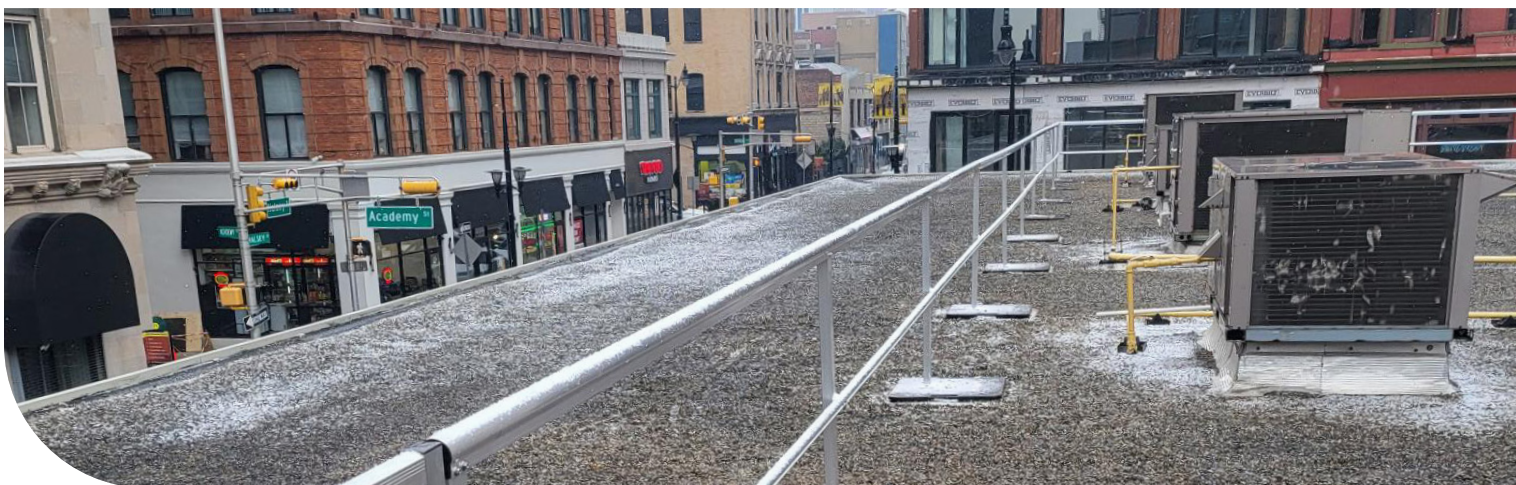


- **Safety Nets (1926.502)**

**OSHA's safety net regulations** state that safety nets are required for construction site work areas that are exposed to vertical drops of 6 feet or more, especially where traditional fall protection is not feasible. These nets should extend either 8, 10, or 13 feet beyond the work area edge, depending on the vertical distance from the working level to the horizontal plane of the net. Nets must have a specific mesh size and strength, with a clear strength rating, and be securely fastened using strong hooks or shackles. Nets must have proof of inspection and certifications at the job site. Safety nets are only ideal for construction and other temporary work sites and should not be used as a permanent solution.

- **Warning Lines for Designated Areas (1910.29(c))**

Warning lines and designated areas are used to make sure employees stay within a marked area during work. The designated area can be marked by a warning line system made of durable materials, such as rope or chain, capable of withstanding substantial force and a minimum breaking strength of 200 pounds. The line should be high enough off the ground to be noticeable but not so high as to lose effectiveness, and it should be visible and close to the work area. Warning lines are considered less effective as a fall protection measure because they rely heavily on worker compliance and awareness. Unlike physical barriers or personal fall arrest systems, warning lines only provide a visual cue and do not physically prevent a worker from going beyond a safe area. Their effectiveness depends on workers consistently recognizing and respecting the boundary marked by the line, which can be challenging in dynamic work environments.



## HOLES, PITS, AND SKYLIGHTS

Under OSHA's perspective, skylights are categorized as holes when considering workplace safety. According to [1910.28\(b\)\(3\)](#), employees must have protection from falling through skylights and other holes 4 feet or more above a lower level. To eliminate this fall hazard, you should install a skylight cover or guardrail system around the skylight. The regulation emphasizes safeguarding against falls through these openings to ensure worker safety on elevated surfaces.

## ROOFTOP ANCHORAGE POINTS

For rooftop anchorage points, the building owner must inform the employer in writing about the safety and compliance of these anchorages. They must confirm that each anchorage has been identified, tested, certified, and maintained to support at least 5,000 pounds in any direction for each attached employee. This assurance is based on an annual inspection by an engineer and the certification of each anchorage, as defined by [OSHA 1910 subpart D](#), with re-certification at least every ten years and a recommendation of every five years for chemically adhesive anchorages.

## EMPLOYEE TRAINING

Under OSHA Ref. 1910.30, employers must provide fall hazard training to employees before exposure to any fall risks. This training, led by a qualified individual, educates employees on effectively recognizing and addressing fall hazards. It encompasses detailed instructions on the correct usage, installation, inspection, operation, and maintenance of personal fall protection systems. Additionally, it includes guidance on procedures to minimize fall risks and the correct application of fall protection equipment.

According to [OSHA regulations](#), employers must retrain workers whenever there's a change in workplace operations or equipment or if a worker's lack of knowledge or skill becomes apparent. This retraining is essential to maintain safety standards and adapt to new conditions. It's also vital to deliver the training in a language and vocabulary that the workers fully understand, ensuring effective communication and comprehension of safety protocols. This approach ensures that employees are always up-to-date with the latest safety practices and equipment usage.

This training is essential not only for legal compliance but also for ensuring the safety and well-being of employees, as it equips them with the necessary skills and knowledge to prevent fall-related accidents.





## | LADDERS OVER 24FT

OSHA's guidelines under [1910.28\(b\)\(9\)](#) specifically address fixed ladder safety, outlining requirements for the use of fixed ladders exceeding 24 feet.

### OSHA REQUIREMENTS

#### **Mandatory Safety Systems for New and Replacement Ladders**

Effective November 19, 2018

Must have either a ladder safety system or a personal fall protection system to ensure the safety of workers when using these ladders.

#### **Fall Protection Requirement for Existing Ladders**

Effective November 19, 2018

Employers must add safety measures to existing fixed ladders that lack fall protection, including installing a cage, well, ladder safety system, or a personal fall arrest system.

#### **Deadline for Ladders Over 24 Feet**

Effective by November 18, 2036

All ladders extending more than 24 feet must have a ladder safety or personal fall arrest system installed by this date.

Following OSHA fall protection regulations requires proper equipment, training, and regular oversight. By following these guidelines, employers can create a safer working environment, particularly for those accessing roofs and other elevated surfaces, while fulfilling their duty to provide fall protection.





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SAFETY SYSTEMS  
ROOFTOP SAFETY & FALL PROTECTION

# START YOUR PATH TO ACHIEVE ROOFTOP COMPLIANCE

Workplace injuries and fatalities caused by falls continue to be a significant concern. It is imperative to prioritize heightened awareness, ensure strict compliance, and implement proactive safety measures. Employers, workers, and regulatory bodies must collaborate to foster a culture of prevention and protection.

**Valcourt's Rooftop Fall Hazard Assessment Tool** outlines each compliance requirement, correlates it with the specific OSHA regulation, and offers solutions for achieving or verifying compliance regarding fall protection. It allows you to verify essential safety features on roof hatches, such as guardrails at the correct height, self-closing gates, and the appropriate safety systems on fixed ladders over 24 feet. Don't wait for an incident to occur, access our digital Rooftop Fall Hazard Checklist for an easy step-by-step guide to start reviewing your building.

Valcourt specializes in comprehensive fall protection solutions, including safety audits, advanced anchorage systems, and expert training.

**Schedule a fall protection consultation for your building with recommendations for customized fall protection solutions to strengthen your workplace safety. Your commitment today can prevent tomorrow's accidents.**

[Access Fall Hazard Tool](#)

[Schedule a Fall Protection Consultation](#)