Fall Protection Rule (OR-OSHA) Changes in Oregon

Re: Oregon – OSHA Fall Protection Rule Changes

Dear HBA Members

Oregon OSHA has changed their Fall Protection rules in construction as required by Federal OSHA (OSHA). As you know the trigger height has changed from 10 feet to 6 feet. In addition, the use of slide guards (toe boards) will not be allowed as your only fall protection measure; it can however be used in connection with additional measures such as a Fall Restraint System. You have always been faced with challenges regarding proper fall protection, however these changes will increase that challenge. Thus, the purpose of this informational sheet is to outline what is required regarding fall protection and to offer additional information that will be useful in addressing specific building and project needs.

COMPETENT PERSONS

Regarding who is qualified to install a fall protection system. OSHA defines a "competent person" as one "who is capable of identifying existing and predictable hazards in the surroundings or working conditions…and who has authorization to take prompt corrective measures to eliminate them."—29 CFR 1926.32(f).

A WRITTEN SAFETY PLAN

We also recognize the need to 'identify existing and predictable hazards.' A key aspect of working safely is identifying potential dangers and then planning how to avoid them. To consistently keep your workers safe on each project we hope you will recognize that having a *written* safety plan is a critical component of completing the work safely.

When a crew begins a new phase of work, and especially one that may be hazardous (i.e., demolition, elevated or confined space work), they should meet briefly to discuss applicable safety considerations by doing a risk assessment to identify potential hazards and to determine how to eliminate or control them. It is important that those involved in these types of work are qualified and, if applicable, meet local government requirements. A *Job Hazard Analysis* process is a good way to systematically work through the task steps and determine the hazard and then safe procedure to follow. Once the JHA is completed it should be reviewed with all those who will work on that aspect of the job.

Attached is a reference tool intended to provide ideas, concepts, and options for a fall protection system. The Home Builders Association does not make any recommendations or requirements for a particular brand or style of product.

FALL PROTECTION SYSTEMS

RESIDENTIAL-STYLE ROOF

Any time your employees are working above six feet in construction there must be a fall protection system in place. This system can include: railings, scaffolds, nets, full-body harnesses, lanyards, lifelines and other approved methods. Consideration should be given to the installation of permanent anchor points whenever possible. Review with the customer the future benefits of Permanent Anchor Points; safety for themselves and future contractors.

1. CHOOSE THE STYLE OF ANCHOR POINT

Some anchor point styles are designed by the manufacturer to be only temporary anchors, while others are designed for permanent installation. Temporary anchors may be used during a re-roofing project, but **permanent anchor points must be planned and installed** before the project's completion. This will provide fall protection anchors for any future roof work.

While some anchor points can be used from each side of the roof, others are designed to be only used from one side of the roof. Usually each anchor point is only rated for one worker at a time, even if it is a double D-ring style that has an attachment point on each side of the roof. In all cases, carefully researching and reading the manufacturer's specifications and installation instructions will ensure that the unit is installed and utilized according to its design.

EXAMPLES OF TEMPORARY ANCHOR POINTS

Halo Residential Roof Anchor

Roof Anchors from MSA

EXAMPLES OF PERMANENT ANCHOR POINTS

UpGear by Werner
especially for asphalt composite roofs

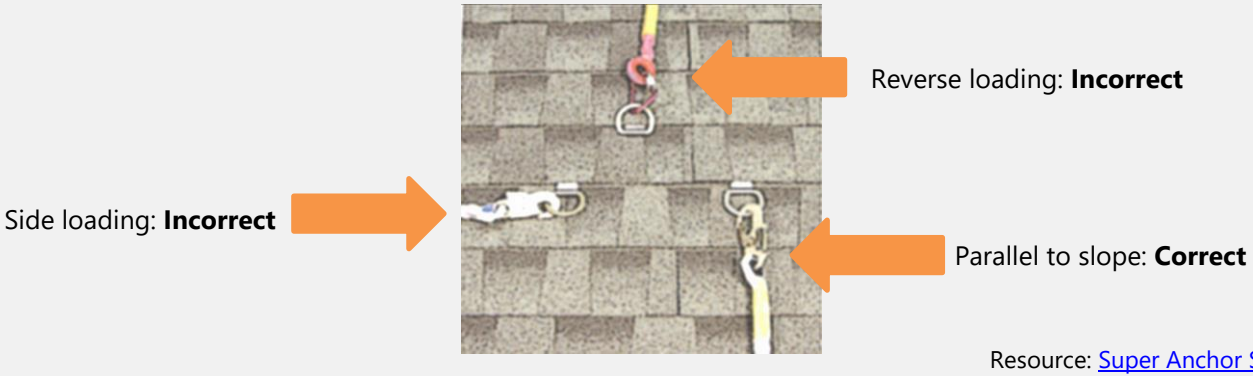
This may be the simplest, most inexpensive method of installing permanent anchor points, causing minimal impact to the roof. Locating the truss or rafter layout, however, may require the assistance of a worker in the attic. The FallTech 7431 is an example of a double D-ring style anchor. Most roofs will require the placement of multiple anchor points.

FallTech Single D-Ring 7434
especially for slate or concrete tile roofs

Slate or concrete flat tile roofs may require the use of a long strap. A mortar ridge or a ridge board may require the strap to be fastened at least one tile above the eventual exit point for the D-ring. It may be difficult to get truss penetration with a double anchor over the ridge-style strap. A single unit style, on the other hand, requires more straps but may allow the tiles to lay flat on the roof surface.

DIRECTION OF FORCE OF PERMANENT ANCHOR POINTS FOR FALL ARREST USE

When a worker is exposed to a free fall hazard on the roof, the direction of a force must be applied down slope against the D-ring. Anchors subjected to reverse or side loading may pull away from framing if a fall occurs.



Resource: Super Anchor Safety

ADDITIONAL EXAMPLES

HitchClip®

CB-1-B - Bolt-On Anchor from Guardian Fall Protection

DBI-SALA® Permanent Roof Anchor with Flashing and Cap

Miller Claw Permanent Roof Anchor

2. SELECT A RAILING SYSTEM

There are professionally designed, engineered, and manufactured temporary railing systems that provide fall protection for a large number of workers at the same time. Once in place, this type of system does not require each worker to have personal fall protection. However, a temporary fall protection system will be needed if the railing installation is performed from the roof surface.

Ground Hug from HUGS

HitchClip® Eave Mounted Guardrail from Norguard

This type of system has its own advantages and disadvantages. A railing system would likely be used by a group involved in multiple roofing operations rather than a single re-roofing project. **Any system must be professionally designed, engineered, and manufactured in a manner resulting in a manufacturer's warranty for industry standard performance.**

3. CHOOSE A PERSONAL FALL PROTECTION SYSTEM

For work done on a residential-style roof, the fall protection system that has proven to be effective both for safety and cost are fall limiting systems. If properly used, the fall limiting system does not allow the worker to reach the edge of the roof surface, thus keeping him away from the fall zone.

Miller Claw Permanent Roof Anchor, RA45

These systems can be purchased in an all-in-one system that comes in a convenient container for safe storage of the system. The system employs a full body harness, lifeline, rope grab, with lanyard and connecting hardware. To be effective, the slack must be removed from the system as the worker moves around the project.

The maximum recommended length for a fall restraint lanyard is three feet. This limits slack in the line between the worker and the rope grab, making it easier for him to adjust the rope grab position.

EXAMPLES OF ALL-IN-ONE SYSTEMS

Guardian Fall Protection 00815 BOS-T50 Bucket of Safe-Tie with Temper Anchor

QualCraft Bucket of Safe-Tie

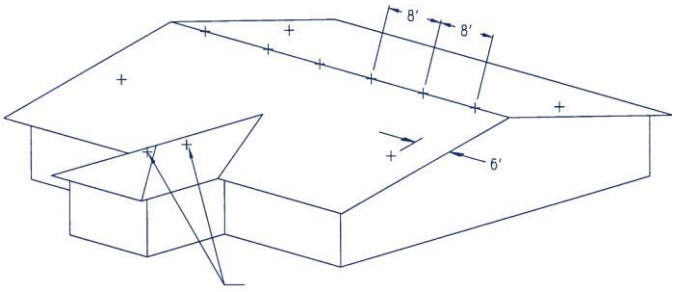
FallTech FTBasic Roofer's Kit - 50 ft

NOTE: None of these kits come with a permanent anchor point. Thus, **permanent anchor points** would need to be purchase as well.

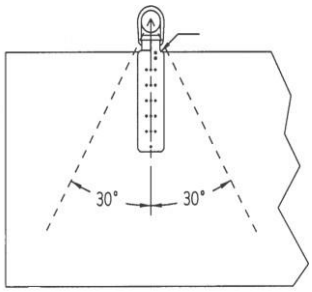
Other all-in-one systems:
Werner Roofing Safety System
Qualcraft Rooftop Safe-Tie Bucket Kit
Qualcraft 50 ft. Rooftop Safe-Tie Bucket Kit
FallProtectionpros.com

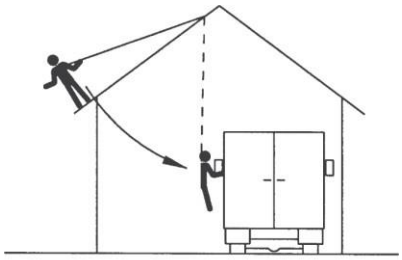
4. DESIGN THE LOCATION OF THE ANCHOR POINTS

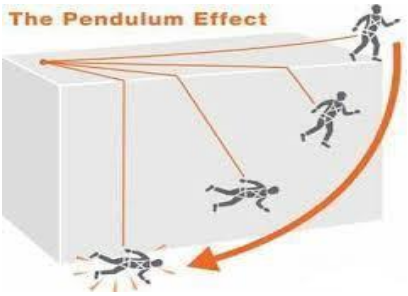
Most existing roofs will need multiple anchor points. It is not common for a single anchor point to provide protection for the entire roof. Each roof is unique and requires an analysis by the competent person.



The recommended range of lateral movement for a worker on a given anchor point is 30°. This angle restriction prevents the worker from moving too far sideways from the anchor point, thereby limiting the chance of swing fall (also known as the "pendulum effect"). If the worker does not have enough anchor points, he may be forced to work so far from the anchor point that, if he were to fall, the length of his lifeline would allow him to hit the ground.







Unless specified by the manufacturer, each anchor point is designed to support the weight of one worker. If a double D-ring type of anchor is installed, two workers would not attach to each side of the anchor at the same time. **Check the manufacturer's directions for proper installation and use.**

5. INSTALL THE RESIDENTIAL ANCHOR POINTS

The question has been raised: What fall protection do we use when we are attaching the first anchor point? OSHA allows the first worker on a roof to walk directly to the anchor point (without doing any work) and connect his personal fall protection system to an anchor. At this point he is protected.

However, to provide continuous protection how does a worker connect his or her first anchor when working above six feet? There are several options.

OPTION 1: SCAFFOLD THE ENTIRE STRUCTURE

This option may be the safest if the roof work is going to require multiple workers working simultaneously on the roof and if it does not seem practical to have a personal fall protection system attached to each worker. Anchors can be installed after scaffold erection.

Scaffold must be appropriately planked at the roof edge with top- and mid-safety rails to serve as fall protection.

OPTION 2: RENT PROFESSIONAL EQUIPMENT

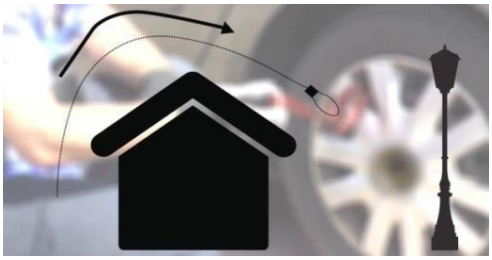
This option would require someone with professional experience operating the boom lift. The configuration of the roof may lend itself to using a piece of equipment or may entirely prohibit it. This will be evaluated during the competent person pre-inspection of the project.

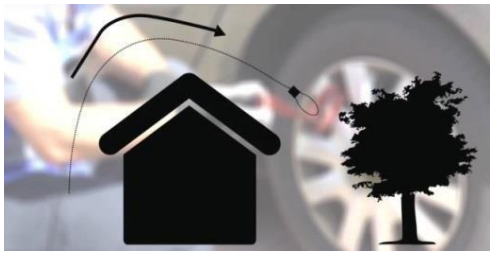
Anchors must be installed from the boom lift basket.

OPTION 3: SCAFFOLD PART OF THE STRUCTURE

Several sections of scaffold – with proper planking and rails – could be placed on one side of the roof, allowing the worker to ascend from the scaffold side of the roof within the footprint of the scaffold. The scaffold only offers fall protection to those working on the scaffold side of the roof. Scaffold assembled by a competent person would be required.

OPTION 4: USE AN ANCHOR POINT FROM THE OTHER SIDE OF THE BUILDING





This option relies on an anchor point on the opposite side of the building. This allows the workers to be secured from falling if he works on the opposite side of the building as the anchor point.

This system, however, requires several crucial elements:

- The oversight by a competent person who ensures the anchor point will support the required load.
- System set-up and project oversight are done by the **same competent person**.
- Viewing and following the recommendations in the Miller Fall Protection Co. video. (3:29)
- Rafter or Truss Tail on the opposite side could also be used on a case by case basis and approved by the competent person. Here are some examples of anchors for this application:
    - http://www.guardianfall.com/performance-safety-products/anchor-points/product/ridge-it-anchor
    - http://www.guardianfall.com/performance-safety-products/anchor-points/product/truss-boss-anchor

- If a vehicle is used as an anchor point, the competent person must ensure that the vehicle is LOCKED OUT and TAGGED OUT from operation. He must also possess the vehicle keys throughout the entire project.

STANDING SEAM METAL ROOF

Several options exist for fall protection anchor points – both temporary and permanent – on standing seam metal roofs. There are also cable systems available that allow a worker to move laterally on the roof while maintaining connection with the fall protection system.

EXAMPLES OF TEMPORARY ANCHOR POINTS

Temporary anchor points allow a worker to move from the ladder to the work location, attach the anchor point, connect his fall protection system, and then perform work. The anchor point clamps onto the standing metal seam.

Two-Way Universal Standing Seam Clamp from Preferred Safety Products, Inc.

SeamSAFE Standing Seam Roof Anchor

EXAMPLES OF PERMANENT ANCHOR POINTS

Fusion™ Roof Anchor Post can be a standalone anchor point or linked in a series DBI-SALA® Roof Top Anchor - For Standing Seam Roofs

FLAT ROOF WITH A LOW PARAPET OR NO PARAPET

The height of a low parapet can be extended by adding a railing system on top of the existing parapet. For flat roofs without a parapet, one option is a non-penetrating roof railing system. In either case, if fall protection anchor points do not exist, temporary anchor points need to be established for the installation of the rail system. In some cases, hiring out the installation is more cost-effective than purchasing temporary anchor points that will no longer be of use after the completion of the project.

EXAMPLES OF ROOF FALL PROTECTION RAILING

Modular Parapet Fixed Guardrail System

Mounting a railing directly to the top of a roof parapet is a cost-effective way of providing rooftop perimeter fall protection

KeeGuard Rooftop Fall Protection Railing

Roof Railing – OSHA Compliant & Non-Penetrating Guardrail

ROOFTOP FIXED LADDERS

Per OSHA, fixed ladders must be provided with cages, wells, or ladder safety devices or self-retracting lifelines where the total length of the climb exceeds 24 feet. Regardless of ladder height, **side rails must extend 42 inches above the top** of the landing or parapet.—OSHA 3124-12R 2003.

EXAMPLE OF ROOFTOP FIXED LADDER

KATT caged modular access ladder

ROOFTOP HATCH RAILING SYSTEM

Regarding rooftop hatchways, OSHA code dictates: "When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both the top and intermediate positions by removable standard railings." Also, the guardrail system must be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge. The handrail shall be metal pipe at least 1 1/2 inches in diameter. (OSHA 29 CFR 1910.23) Historical data shows that many workers are either not willing to (due to fear of being locked on the roof) or do not remember to close the hatch.

EXAMPLES OF HATCH RAILING SYSTEMS

Bil-Guard ® Hatch Railing System
Fixed hatch railing system provides a permanent means of fall protection for roof hatch openings

KeeHatch Roof Hatch Safety Railing System
OSHA-compliant guardrail to surround roof hatch assemblies without penetrating the roof membrane

RESOURCES

USEFUL OSHA PUBLICATIONS

- Fall Protection Trigger Heights Fact Sheet: http://osha.oregon.gov/OSHAPubs/factsheets/fs64.pdf
- Fall Prevention Fact Sheet: https://www.osha.gov/stopfalls/factsheet.html
- Fact Sheet Preventing Falls: https://www.osha.gov/OshDoc/data_Hurricane_Facts/fall.html
- Guidance Document: Fall Protection in Residential Construction: https://www.osha.gov/doc/guidance.html
- Erecting Exterior /Interior Walls: https://www.osha.gov/Publications/erecting-walls-factsheet.html
- Residential Roof Repair: https://www.osha.gov/Publications/reducing-falls-roof-repair-factsheet.html
- Residential Roof Sheathing: https://www.osha.gov/Publications/reducing-falls-during-residential-construction-roof-sheathing.html
- Standing Seam Metal Roof: https://www.osha.gov/Publications/reducing-falls-installing-standing-seam-metal-roofs.html
- Installing Roof Trusses: https://www.osha.gov/Publications/reducing-falls-installing-roof-trusses-factsheet.html
- Tile Roof: https://www.osha.gov/Publications/reducing-falls-installing-tile-roofs-factsheet.html
- Re-Roofing: https://www.osha.gov/Publications/reducing-falls-during-residential-construction-re-roofing.html
- Fall Distance Educator App: http://osha.oregon.gov/OSHAPubs/apps/fall-safety/fall-safety.html
- Scaffolding eTool: https://www.osha.gov/SLTC/etools/scaffolding/supported/index.html

ADDITIONAL PRODUCT IDEAS

The following websites offer a wide variety of products:

- Kee® Safety
- Capital Safety
- Guardian Fall Protection
- Bilco
- Fallprotectionpros.com
- MSA WORKMAN 10072487 Harness
    - Comfortable and used by Bethel
- Miller Fall Protection
    - Catalog with additional documentation included

VIDEOS ON FALL PROTECTION

- How to fit your harness properly
    - How to put on a fall protection harness by Hy-Safe Technology (4:25)
    - FALL PROTECTION - How to Inspect and Don a Full Body Harness – FallTech (5:47)
- Lanyard use
    - FALL PROTECTION - How to Inspect your Fall Protection Lanyard - FallTech (5:07)
- Fall protection rope grab system
    - How to use a Miller Titan Rope Grab for both vertical and horizontal applications at height (1:05)
    - Werner Ladder - Fall Protection Roofing Compliance Kit (2:32)
- Fall protection solutions
    - Werner Complete Roofing Safety Kit (5:01)