

WORKER MANUAL | FALLS (ALTURAS)



“Workers’ Defense Project taught me how to be safer at work. Now I’m not afraid of asking questions, and I’m even learning how to facilitate safety trainings for other members.”

—JORGE DE LOS SANTOS



FALLS (ALTURAS)

PROTECT YOURSELF FROM FALLS IN CONSTRUCTION

PROTECT YOURSELF FROM FALLS

Falls are very serious!

- Falls are the leading cause of death in construction. In 2010, there were 264 fall fatalities (255 falls to lower level) out of 774 total fatalities in construction. These deaths are preventable.
- Trips, slips and falls on ladders make up a huge proportion of injuries and fatalities among construction workers.
- The use of railings, fall protection systems, covers and personal fall arrest systems can prevent many falls.

Plan, Provide, Train!

- **PLAN** ahead to get the job done safely.
- **PROVIDE** the right roof equipment.
- **TRAIN** everyone to use the equipment safely.



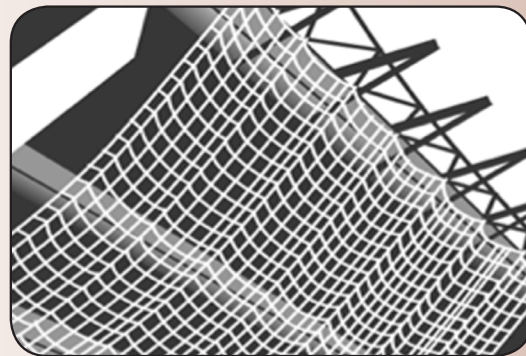
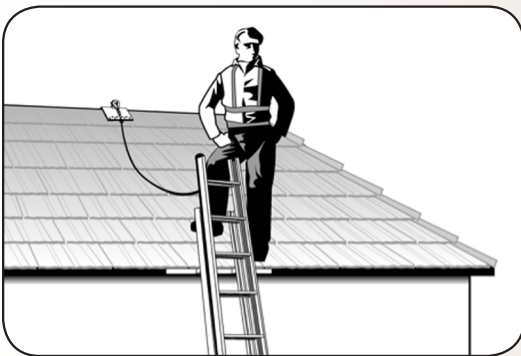
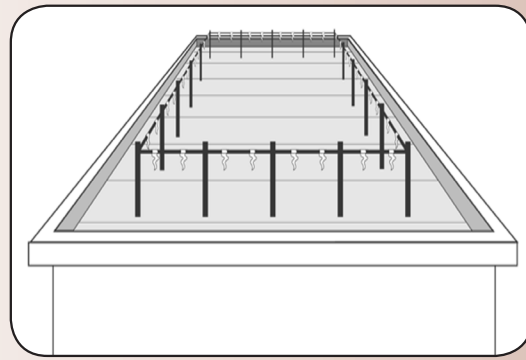
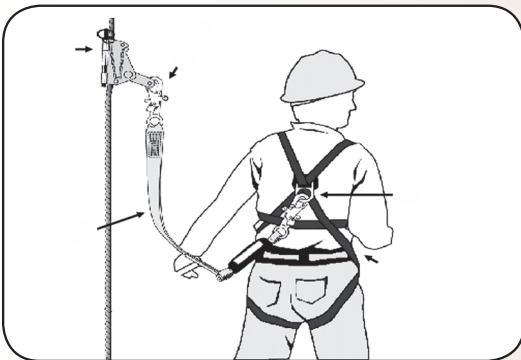
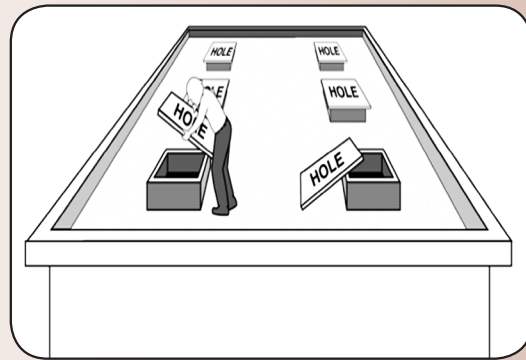
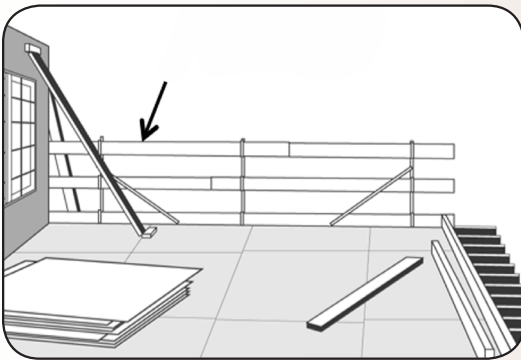
REMEMBER!

While working at heights over 6 feet (1.8 meters) over the level below you, or while working over dangerous equipment, always use fall protection.

PROTECT YOURSELF FROM FALLS

What kinds of fall protection are there?

Where employees are exposed to falling 6 feet (1.8 meters) or more from an unprotected side or edge, the employer must select either a guardrail system, safety net system, or personal fall arrest system to protect the worker.



LADDER SAFETY

When does OSHA require use of ladders?

A ladder (or stairway) must be provided at all work points of access where there is a break in elevation of 19 inches (48.2 centimeters) or more except if a suitable ramp, runway, embankment, or personnel hoist is provided to give safe access to all elevations.

REMEMBER!

A competent person should inspect ladders for visible defects, and shall mark damaged ladders with "don't use!" and throw them away.



REMEMBER!

Never carry anything in your hands while going up or down a ladder. While climbing a ladder, keep three points of contact at every moment.

LADDER SAFETY

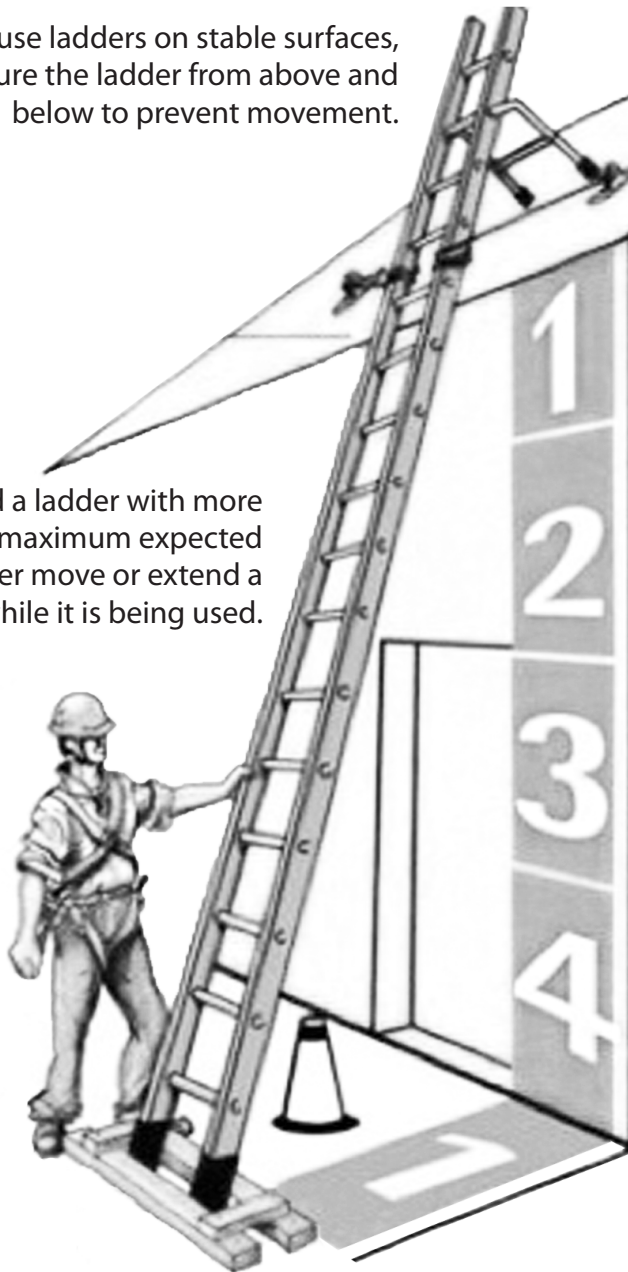
Falls from ladders can be prevented!

Only use ladders on stable surfaces, and secure the ladder from above and below to prevent movement.

Never load a ladder with more than their maximum expected weight. Never move or extend a ladder while it is being used.

Make sure that the ladder is long enough to reach the work area.

Keep ladders and shoes free of oil, grease, mud, and other slippery hazards.



LADDER SAFETY

What about portable ladders?



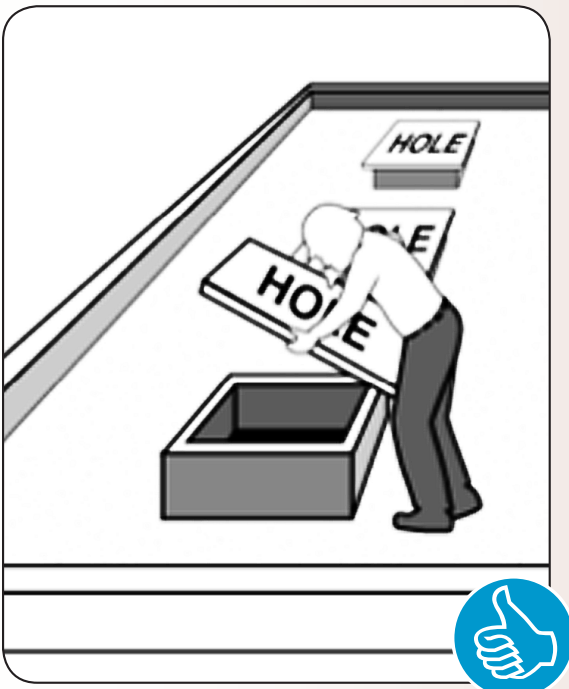
- Only use portable ladders in their fully open position.



- Don't use the top rung of a portable ladder as a step or a seat.

SAFETY AND FLOOR OPENINGS

Cover all holes!



- Every opening in floors and roofs should have a cover.
- All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
- Covers should sustain at least twice the maximum expected weight of workers, equipment, and materials.
- Every cover should be painted with a distinctive color or marked with the word "HOLE" or "COVER".

SAFETY AND UNPROTECTED EDGES

When and how should you use handrails?

- Stairs that have four or more steps should have at least one handrail. Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet or more to lower levels by guardrail systems.
- Handrails should be finished and well maintained to prevent dangerous irregularities.
- Handrails should be wide enough to grasp to prevent falls.
- A stair railing shall be of construction similar to a standard railing with a vertical height of not less than 36 inches (91.5 centimeters) from the upper surface of top rail to the surface of tread in line with face of riser at forward edge of tread.



SAFETY AND UNPROTECTED EDGES

When are guardrails necessary?

- Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 meters) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1 meter) above the walking/working surface must be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.
- Guardrails on the sides of buildings should have top and middle rails, as well as toe boards where there is a danger of falling materials.
- Top edge height of top rails or equivalent guardrail system members shall have a vertical height of approximately 42 inches (106.6 centimeters), plus or minus 3 inches (7.6 centimeters) above the walking/working level.
- Guardrail systems shall be surfaced so as to prevent injury to an employee, with a strength to withstand at least 200 pounds (90 kilograms), the minimum requirement applied in any outward or downward direction, at any point along the top edge.



SAFETY AND UNPROTECTED EDGES

What is a warning line?

A warning line is erected all around sides of the roof work area and shall consist of ropes, wires, or chains with a minimum tensile strength of 500 pounds, and supporting stanchions capable of resisting, without tipping over, 16 pounds applied horizontally.

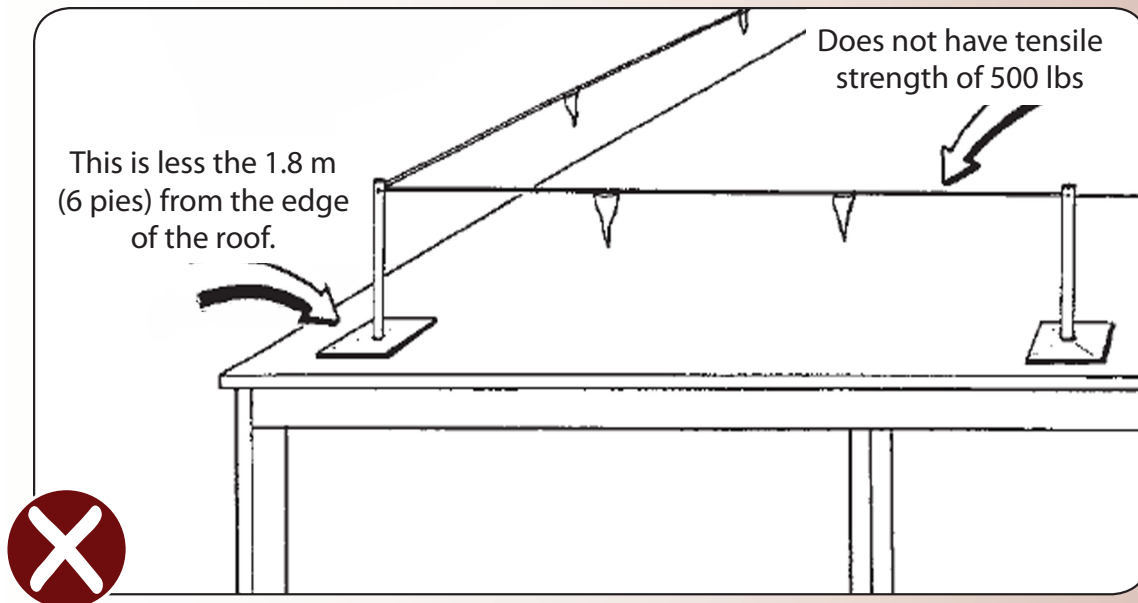
Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels shall be protected from falling by guardrail, safety net, or personal fall arrest systems or a combination of a:

- ☐ Warning line system and guardrail system,
- ☐ Warning line system and safety net system,
- ☐ Warning line system and personal fall arrest system, or
- ☐ Warning line system and safety monitoring system.

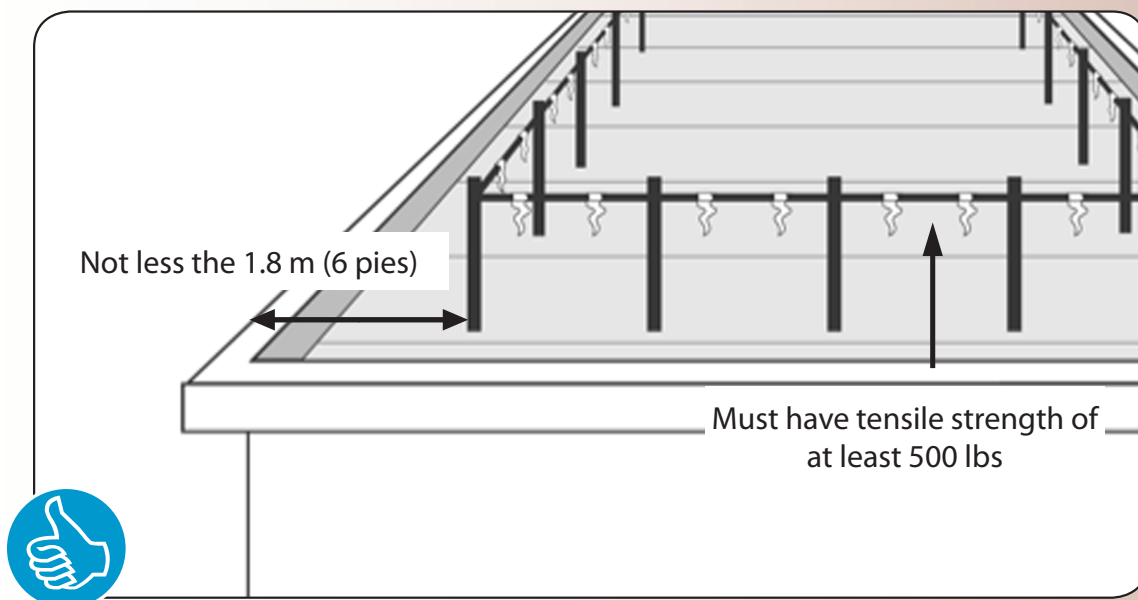


This worker should not be at the top without fall protection. One should use warning lines in combination with another form of fall protection.

SAFETY AND UNPROTECTED EDGES



The warning lines shall be erected not less the 6' from the edge of the roof.



Rope, wire, or chain shall be rigged so that its lowest point (including sag) is 34 inches and its highest point is 39 inches from walking/working surface and shall be flagged with high visibility material at not more than 6' intervals.

SCAFFOLD SAFETY

When is a scaffold safe to use?



- Scaffolding should be designed and constructed adequately.
- Use guardrails on scaffolding that is 10 feet (3 meters) or taller.
- In addition to guardrails, personal fall arrest systems are recommended for jobs on platforms that are 10 feet (3 meters) or higher.
- A competent person should inspect all scaffolding before beginning the job and after any changes made to the scaffolding.

SCAFFOLD SAFETY

Be careful up there!

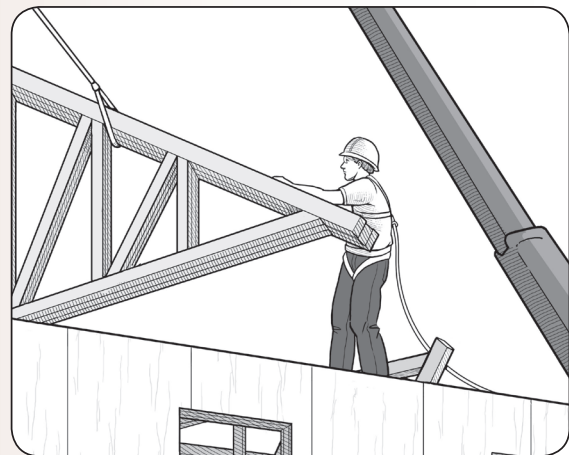
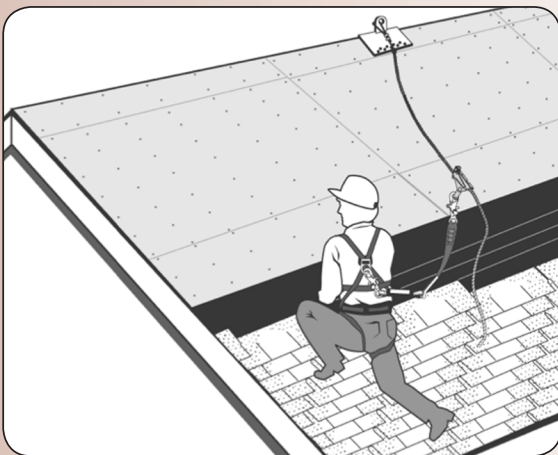
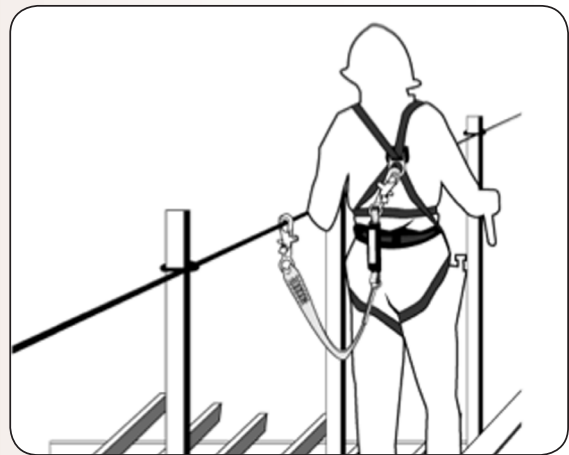
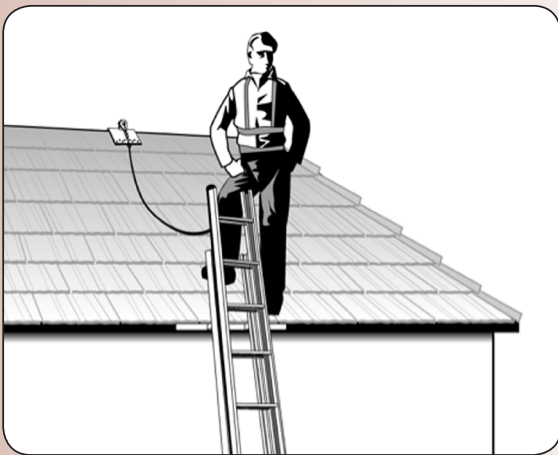


- Never use blocks, bricks or ladders on top of scaffolding to reach higher, nor to climb onto scaffolding.
- Never use bricks, blocks, or barrels to support scaffolding.
- All scaffolding should be able to support at least four times the expected weight.
- Only use ladders that are designed for use with scaffolding. The ladder should be firmly secured to the scaffolding at all times.

PERSONAL FALL ARREST SYSTEMS

What are personal fall arrest systems used for?

- They reduce the risk of injury if you fall, but they do not keep you from falling.
- They should be examined before each use for damage or deterioration. A personal fall arrest system consists of an anchorage, connectors, body harness and may include a lanyard, deceleration device, lifeline, or a suitable combination of these. Body belts used for fall arrests are prohibited.



Source: www.orosha.org

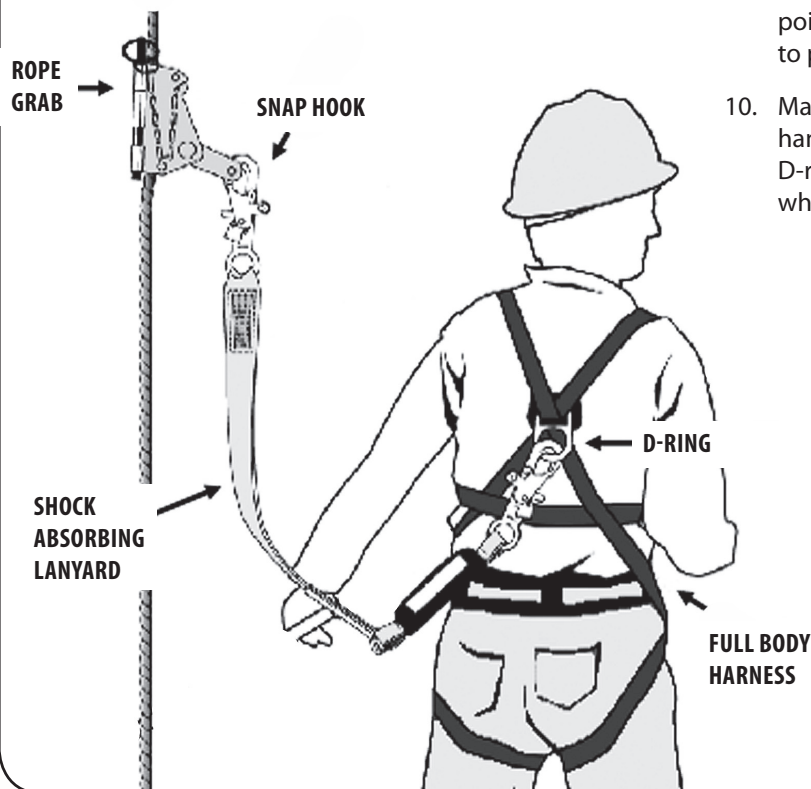
PERSONAL FALL ARREST SYSTEMS

How to Wear a Full-Body Harness

1. Hold the harness by the back D-ring. Shake the harness to allow all straps to fall in place.
2. With waist and/or leg straps unbuckled, release snaps and unbuckle at this time.
3. Slip straps over your shoulder so the D-ring is located in middle of the back.
4. Connect the waist strap. The waist strap should be tight, but not binding.
5. Pull the buckle portion of the leg strap between your legs and connect to opposite end of the leg strap. Repeat the procedure with second leg strap.
6. After all straps have been buckled, tighten all friction buckles so harness fits snug but allows free range of motion.
7. If the harness contains a chest strap, pull it around the shoulder strap and fasten it in middle chest area. Tightening will keep the straps taut.
8. To remove the harness reverse the procedure.

9. Reconnect the waist strap after removing the harness. This will give you a starting point when next attempting to put harness on.

10. Manufacturer's recommend hanging the harness by the D-ring to help keep its shape when not in use.



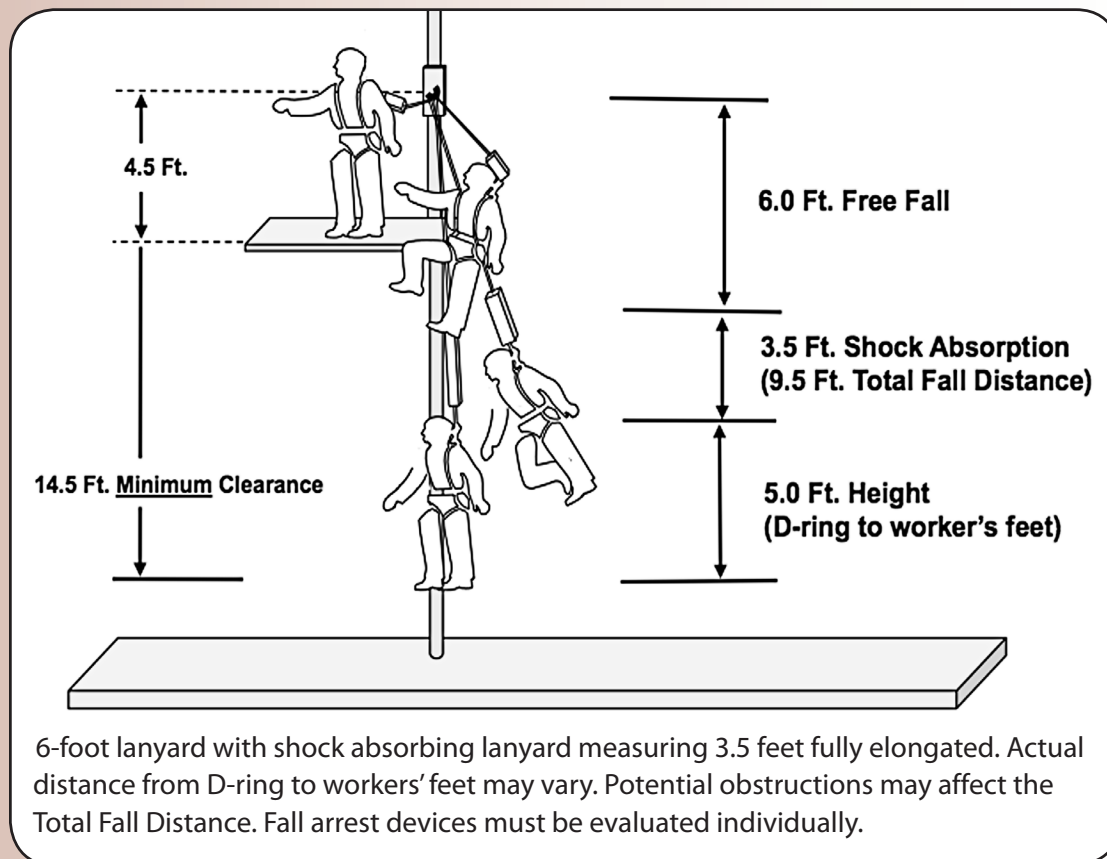
Source: www.orosha.org

PERSONAL FALL ARREST SYSTEMS

How should one measure fall distance?

	FREE-FALL DISTANCE*	The distance of the fall from the anchor to the activation of the deceleration device.
+	DECELERATION DISTANCE	From the activation of the deceleration device to a complete stop.
=	TOTAL FALL DISTANCE	The combination of the two above, plus any other condition, such as the stretch of a rope.

* With a Personal Fall Arrest System, the maximum allowable free fall is 6 feet.

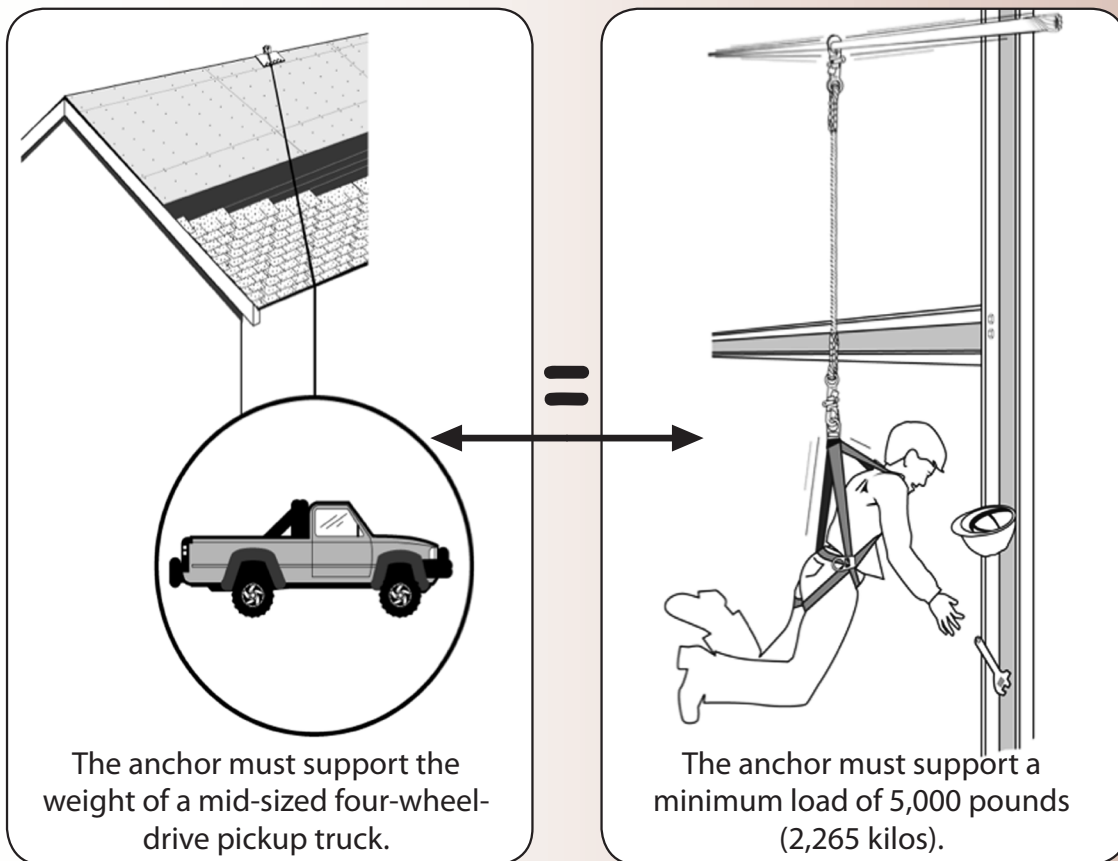


Source: www.orosha.org

PERSONAL FALL ARREST SYSTEMS

How much weight should an anchor support?

- The anchor must support a minimum load of 5,000 pounds (2,265 kilos), approximately the weight of a mid-sized four-wheel-drive pickup truck. Or, be designed by a QUALIFIED person with a safety factor of two times the impact force of a worker free falling six feet.



REMEMBER!

A competent person is capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

FALL SAFETY IN CONSTRUCTION

Employer responsibilities

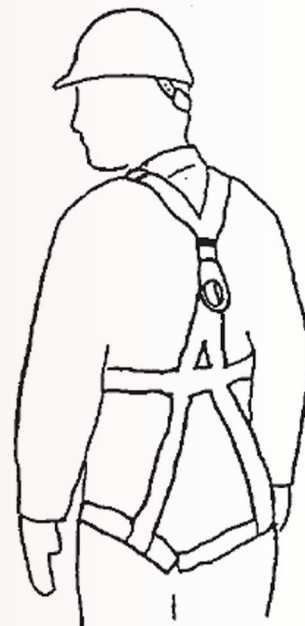
Employers are required to assess the workplace to determine if the walking/working surface on which employees are to work have the strength and structural integrity to safely support workers.

Employees are not permitted to work on those surfaces until it has been determined that the surfaces have the requisite strength and structural integrity to support the workers.

Employers must provide a training program for each employee using ladders and stairways. The program must enable each employee to recognize hazards related to ladders and scaffolds and to use proper procedures to minimize these hazards.

For example, employers must ensure that each employee is trained by a competent person in the following areas:

- The nature of fall hazards in the work area,
- The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used,
- The proper construction, use, placement, and care in handling of all ladders and scaffolds, and
- The maximum intended load-carrying capacities of ladders and scaffolds used.

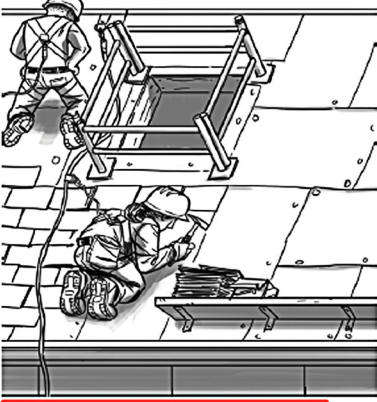


FALL SAFETY IN CONSTRUCTION

For more information, see the following resources from OSHA:

FALLS FROM ROOFS CAN BE PREVENTED!

- ✓ Wear a harness and always stay connected
- ✓ Make sure your harness fits
- ✓ Use guardrails or lifelines
- ✓ Inspect all fall protection equipment before use
- ✓ Guard or cover all holes, openings, and skylights



PLAN ahead to get the job done safely.
PROVIDE the right roof equipment.
TRAIN everyone to use the equipment safely.

DON'T disconnect from the lifeline

DON'T work around unprotected openings or skylights

DON'T use defective equipment



Occupational Safety & Health Administration We Can Help

Home Workers Regulations Enforcement Data & Statistics Training Publications Newsroom Small Business **OSHA**

PLAN. PROVIDE. TRAIN.
Three simple steps to preventing falls.

Home Educational Materials and Resources Training Media Resources



Photo by Koralie Hill

Welcome to OSHA's Fall Prevention Campaign

Highlights en Español

- Poster. Also available as a 1 MB PDF
- Fact Sheet. Also available as a 1 MB PDF

Prevention Videos (v-Tools)

- Falls in Construction
 - Floor Openings
 - Fixed Scaffolds
 - Bridge Decking
 - Reroofing
 - Leading Edge Work
 - Falls prevention. California Fatality Assessment and Control Evaluation (FACE)

Campaign Partners

- National Institute for Occupational Safety and Health (NIOSH)
- The National Occupational Research Agenda (NORA)

PLAN
ahead to get the job done safely.

PROVIDE
the right equipment.

Source: <http://www.osha.gov/stopfalls/>

FALL SAFETY IN CONSTRUCTION

Additional resources

For more information about preventing work related injuries and illnesses, you can check out the information provided by the following organizations:

OSHA'S RESIDENTIAL CONSTRUCTION REGULATIONS

Description of Occupational Safety & Health Administration (OSHA) safety & health regulations. <http://www.osha.gov/SLTC/residential/index.html>

NIOSH CONSTRUCTION INFORMATION

Free information about safety and health hazards in the construction industry. <http://www.cdc.gov/niosh/construction/>

CENTER FOR CONSTRUCTION RESEARCH & TRAINING

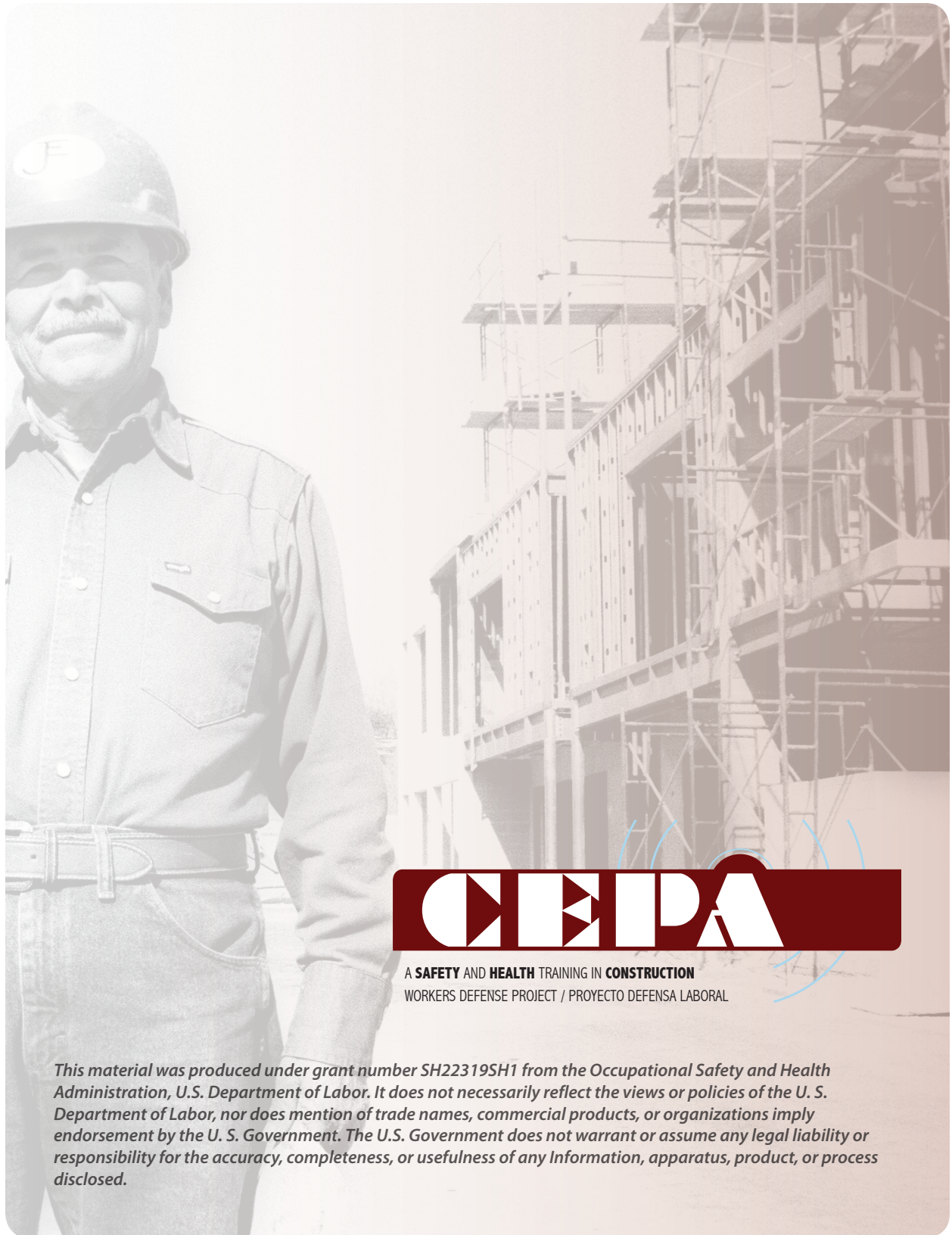
Source for information about controlling and eliminating construction safety and health hazards and training. <http://www.cpwrcolutionsolutions.org/>

NATIONAL ASSOCIATION OF HOME BUILDERS

Safety & health information from home builders' trade association. <http://www.nahb.org/page.aspx/category/sectionID=616>

INTERFAITH WORKER JUSTICE & NDLON

Affiliated Worker Centers provide safety & health training in English and Spanish and assist workers with other employment problems, like "wage theft". <http://www.iwj.org/network/workers-centers>
<http://www.ndlon.org>



A **SAFETY AND HEALTH** TRAINING IN **CONSTRUCTION**
WORKERS DEFENSE PROJECT / PROYECTO DEFENSA LABORAL

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