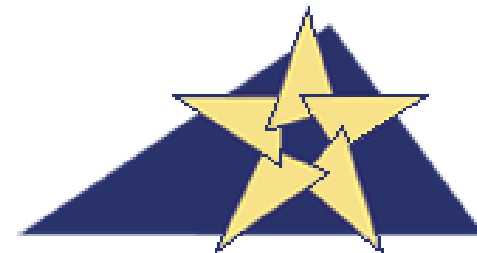


Fall Protection and Prevention

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Norfolk Regional Office



Objectives

- Discuss the *Duty to have fall protection*
- Review types of fall protection and protection from falls
- Recognize/Identify/Describe fall hazards
- Discuss training of fall protection and employer requirements

<https://www.osha.gov/Top Ten Standards.html>



What is a fall hazard?

- Anything at your worksite that could cause you to lose your balance or lose bodily support and result in a fall.
- As a general rule OSHA requires that fall protection be required at 6 feet in construction, there are exceptions in other standards.

16 VAC 25-145: Fall Protection for Subpart R – Steel Erection

- Virginia Specific Standard that is stricter than federal standards of 1926.760
- **Each** employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge of 10 feet or more above a lower level shall be protected from fall hazards



What are 3 major types of fall hazards?

1. Unprotected edges, openings, and leading edges



2. Improper Scaffolding Construction



3. Unsafe Portable Ladders



Unprotected Sides, Openings, and Edges

- Fall protection required at 6' for general construction, unless over dangerous equipment
- Unprotected sides and edges – any side or edge of the walking/working surface where there is no wall or guardrail
- Openings are voids 30 or more inches high and 18 or more inches wide
- Holes are voids in excess of 2''









Scaffolding

- Inspected pre-shift by competent person
- Fall protection at 10 feet
- Spacing in planks no more than 1"
- Extend over support 6" or cleated
- Base plates and mud sills where necessary
- Ladder access
- Toe boards, where material could fall
- Fall Protection
- Housekeeping











Ladders

- Inspect
- Extend 3 feet when used to access upper landings or secure
- No broken rungs/slippery surfaces
- Stable level surfaces
- Not able to be displaced by workplace activity
- Load ratings











How can I protect myself from fall hazards?

➤ Fall Protection Equipment

- Guardrail Systems
- Safety Net Systems
- Personal Fall Arrest

➤ Safe Ladder Use

➤ Training

Guardrails



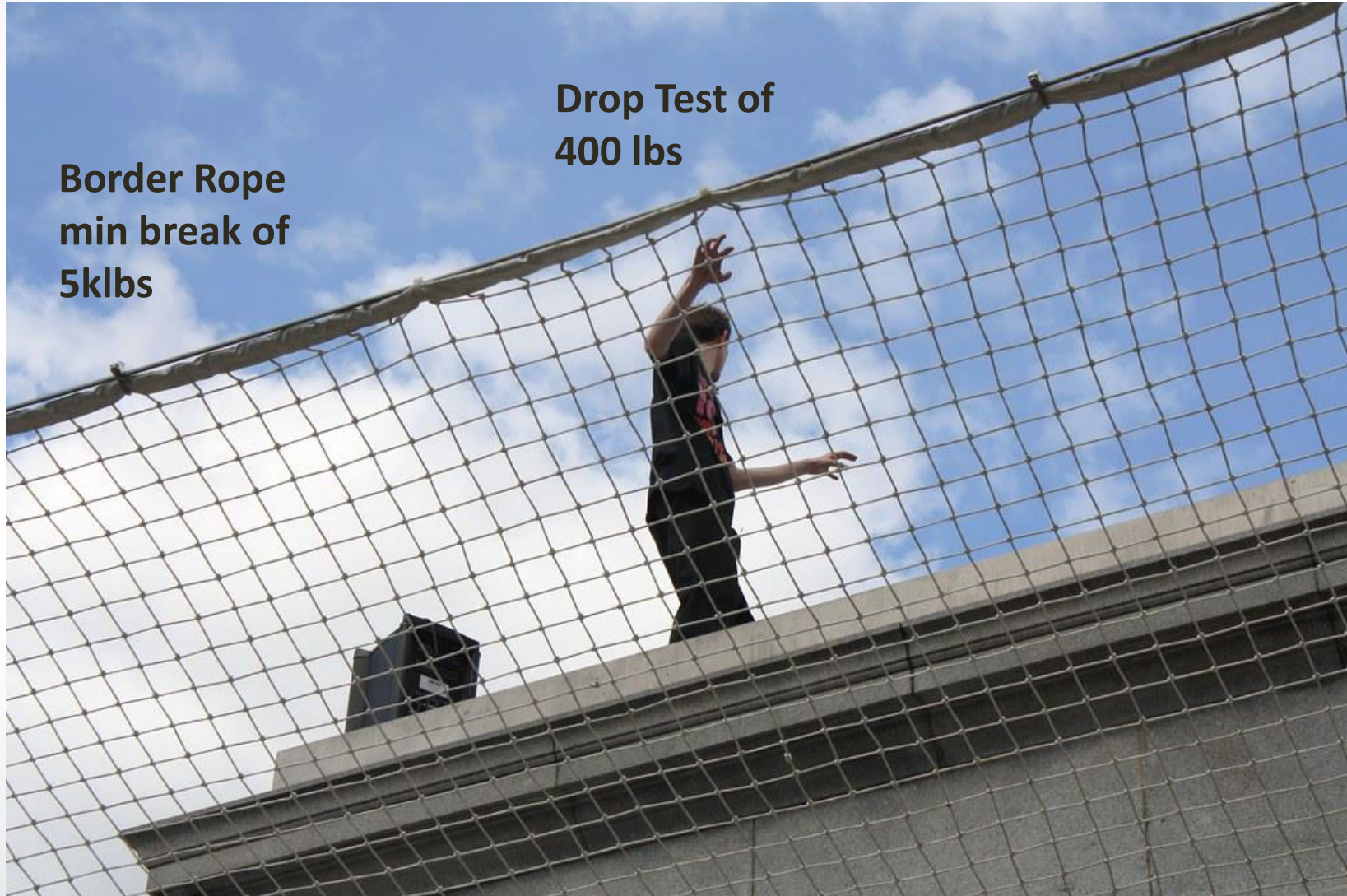
A construction worker in a white shirt and blue jeans stands on a wooden scaffold. The scaffold has two levels of railings. The top railing is made of a single wooden beam, and the midrail is made of two wooden beams. Yellow plastic safety caps are attached to the railings. The background shows a blue sky with some clouds.

**Top rail 42"
+/-3**

**Force of 200
lbs**

**Midrail at
least 21"**

Safety Nets



**Border Rope
min break of
5klbs**

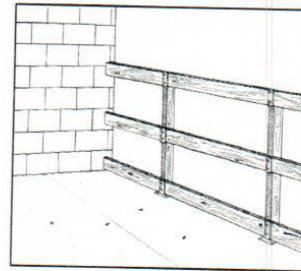
**Drop Test of
400 lbs**

Guardrail and Safety Net Systems Summary

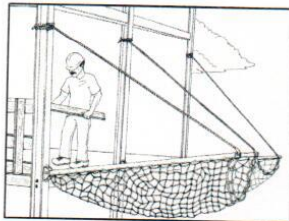
Guardrail and safety net systems are two ways to protect workers from falls on the job. If you are more than 6 feet above the lower surface, some type of fall protection must be used by your employer.

If your employer uses **guardrails**:

- Toprails must be at least 1/4 inch thick to prevent cuts and lacerations; and they must be between 39 and 45 inches from the working surface;
- If wire rope is used, it must be flagged at least every six feet with highly visible materials;
- Midrails, screens or mesh must be installed when there are no walls at least 21 inches high. Screens and mesh must extend from the toprail to the working level.
- There can be no openings more than 19 inches;
- The toprail must withstand at least 200 lbs. of force; the midrail must withstand 150 lbs. of force;
- The system must be smooth enough to protect workers from cuts and getting their clothes snagged by the rail.
- If guardrails are used around holes at points of access, like a ladderway, a gate must be used to prevent someone from falling through the hole, or be offset so that a person cannot walk directly into the hole.



If your employer uses **safety nets**:



- The nets must be as close as practicable under the working surface, but never more than 30 feet below;
- The safety net must be inspected every week for damage;
- Each net must have a border rope with a minimum strength of 5,000 lbs.;
- The safety net must extend outward a sufficient distance, depending on how far the net is from the working surface (OSHA has a formula to follow);
- The safety net must absorb the force of a 400-pound bag of sand dropping on to the net ("the drop test");
- Items in the net that could be dangerous must be removed as soon as possible.

SOURCE: Construction Safety & Health Fall Hazards, Central New York COSH, 2007, OSHA grant product

Personal Fall Arrest

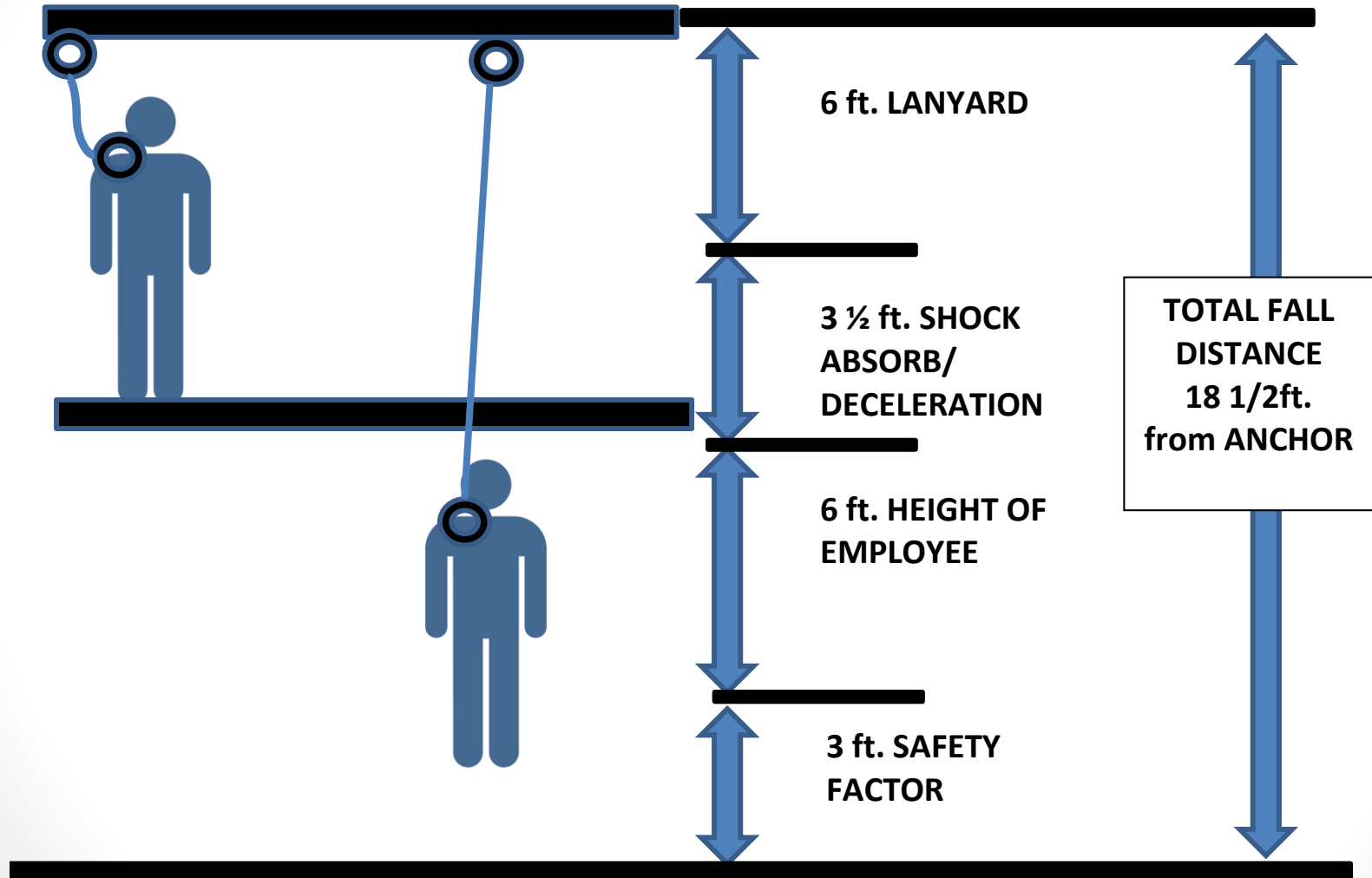
- Lanyards/lifelines min break of 5klbs
- Anchor points 5klbs
- Rigged so neither free fall 6 ft or contact lower level
- Prompt rescue plan







Fall Factor





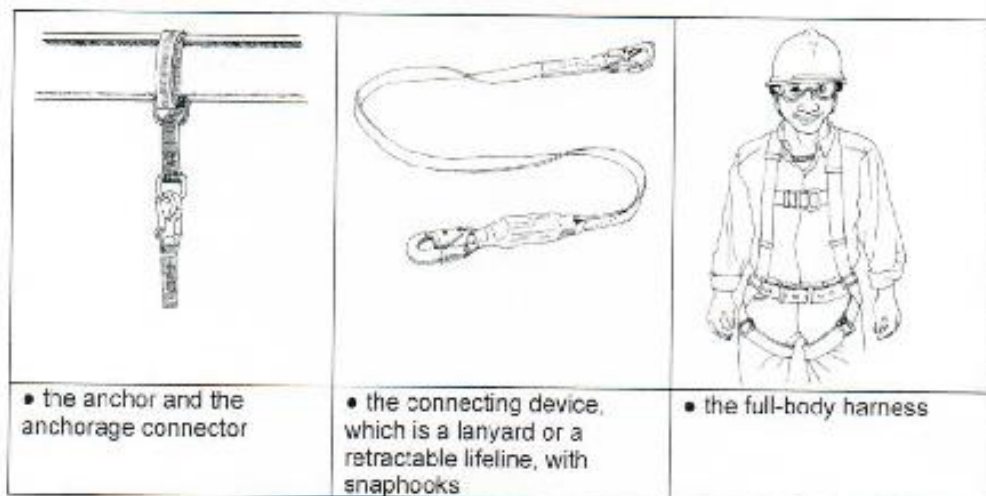


Personal Fall Arrest Systems Summary

Personal fall arrest systems are one way to protect workers from falls. In general, workers must have fall protection when they could fall 6 feet or more while they are working.

OSHA **requires** workers to wear a full-body harness, (one part of a *Personal Fall Arrest System*) when they are working on a *suspended scaffold* more than 10 feet above the working surface, or when they are working in *bucket truck or aerial lift*. Employers may also choose to use a Personal Fall Arrest System, instead of a guardrail, when workers are working on a *supported scaffold* more than 10 feet above the working surface.

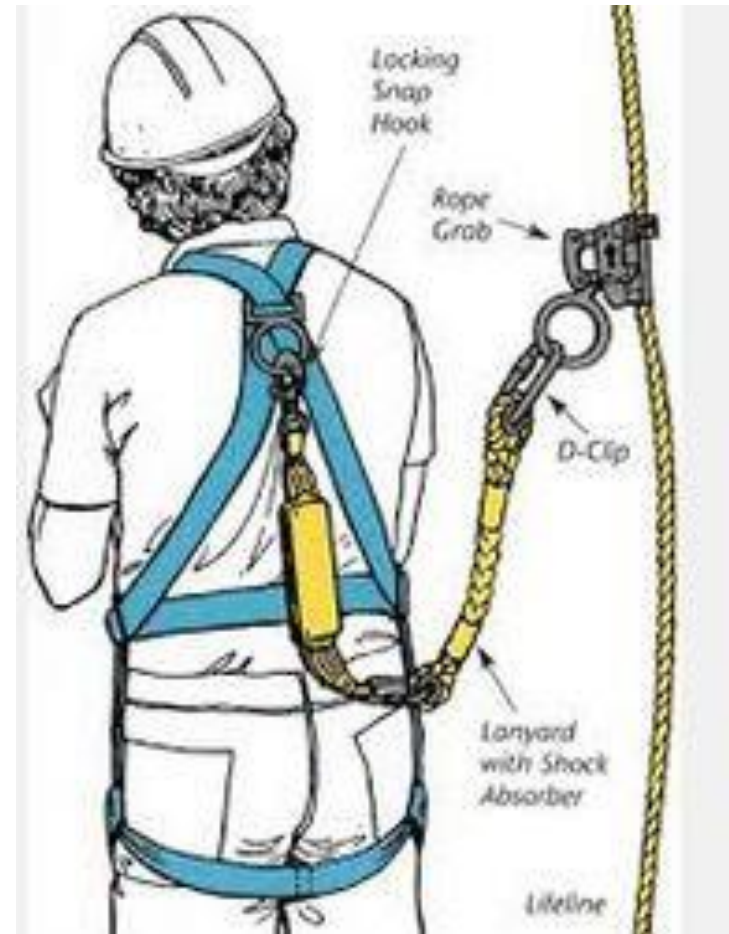
There are **three** major components of a Personal Fall Arrest System (PFAS):



The following are some things to remember about personal fall arrest systems:

1. A personal fall arrest system is made up of an **anchorage, connecting device, and a full-body harness**. The connecting device may be a lanyard with snaphooks, or a self-retracting lifeline. A lanyard could also include a deceleration device. Make sure you are using components from the same manufacturer to ensure that the system works as it should. If not, any substitution or change must be evaluated or tested by a competent person to ensure that it meets the standard.
2. **Body belts cannot be used** for fall arresting service. However, a body belt is allowed as part of a positioning system. A positioning system is one way to prevent falls from occurring. It involves equipment for keeping your body in a position where you are not able to fall. For all situations where you could actually fall, you need to wear a full-body harness.
3. Your personal fall arrest system must be **inspected for damage** each time before you wear it. [If there are defects, or if someone has taken a fall using the equipment, it must be removed from service.]

Harness and Lanyards



Fall Protection Training Requirements



Certification

- The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer.

Shall Include:

- nature of fall hazards
- procedures for erecting, maintaining, disassembling, and inspecting the fall protection
- use and operation
- role of each employee
- the limitations
- handling and storage of equipment

Training Materials

ToolboxTalks

First Talk: Ladder Safety

Job site example

Ryan was applying sheetrock mud to a wall and was standing on the top rung of a 12-foot ladder. He lost his balance, fell to the concrete floor, and landed on his head. He suffered a major head injury.

Ladders are involved in many incidents like this, some of which are fatal. Your life literally can depend on knowing how to inspect, use and care for this tool. Let's spend a few minutes talking about ladders.

Inspecting ladders

Before using any ladder, inspect it. Look for the following faults:

Using ladders

Choose the right type and size ladder. Except where stairways, ramps, or runways are provided, use a ladder to go from one level to another. Keep these points in mind:

1. Be sure straight ladders are long enough so that the side rails extend above the top support point, by at least 36 inches.
2. Don't set up ladders in areas such as doorways or walkways where others may run into them, unless they are protected by barriers. Keep the area around the top and base of the ladder clear. Don't run hoses, extension cords, or ropes on a ladder and create an obstruction.

Review





















Q&A

- In general fall protection must be provided to construction workers who are working on surfaces with unprotected sides and edges which are 6 feet above the lower level.
- What are the ways an employer can protect workers from falls

Guardrails, safety net systems, personal fall arrest

- For work on scaffolds, fall protection must be provided if they are working 10 feet above a lower level.

- Guardrails are often used by employers to protect workers from falls. How high must the top guardrail (toprail) be above the working surface?

42" +/- 3"

- A personal fall arrest system consists of :

An anchorage, lanyard and connectors, and a full body harness

- The top of a ladder must extend at least 3 feet above the surface you are climbing onto

For additional information...

- www.doli.virginia.gov
- www.osha.gov

Thank You

