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FALL HAZARDS PART 2

MODULE DESCRIPTION

The purpose of this training module is to provide an overview of the Occupational Safety and Health Administration's (OSHA's) guidelines and different protection methods.

OBJECTIVES

After completing this module, students will be able to:

- Describe OSHA's regulations that protect workers on elevated surfaces
- List the primary fall protection methods
- Explain how guardrails help prevent falls
- Explain guidelines for using safety nets
- Describe the components of personal fall arrest systems

MODULE OUTLINE

1. Fall Hazards
    - A fall hazard is anything that may cause a person to lose his or her balance, or bodily support, resulting in a fall. Any walking or working surface is a potential fall hazard.
    - Anyone working at a height of four feet or more is at risk for a fall
    - Occupational Safety and Health Administration (OSHA) requires employers to provide fall protection for individuals working:
        - At a height of six feet or greater, or
        - Above dangerous equipment or machinery
    - These regulations provide specific guidelines for:
        - Guarding fall hazards
        - Using ladders safely
        - Constructing stairs properly
        - Assembling and using scaffolds safely
    - Due to OSHA's rules, employers must:

- Provide working conditions that are free of known dangers
- Keep floors in work areas in a clean and sanitary condition
- Select and provide required personal protective equipment at no cost to workers
- Train workers about job hazards in a language that they can understand

2. Types of elevated surfaces:
   - Scaffold – Any temporary elevated platform and its supporting structure
   - Portable Ladder – Any ladder that can be readily moved or carried
   - Fixed Ladder – A vertical ladder that is permanently attached to a structure, building, or equipment
   - Fixed Industrial Stairs – A series of steps leading from one level or floor to another that is permanently attached to a structure or building
   - Floor Opening – An opening measuring 12 inches or more
   - Wall Opening – An opening at least 20 inches high and 18 inches wide in any wall or partition through which persons may fall
3. Primary methods to protect workers from fall hazards
   - Fall protection equipment

     Guardrails – considered a fall prevention system because is stops a person from falling in the first place. OSHA requirements are:
     - Openings cannot exceed 19 inches
     - Must be smooth enough to protect workers from cuts and avoid snagging their clothes
     - Screens and mesh must extend from top rail to the working level
     - Guardrails close to holes at points of access, like a ladder way, require a gate to prevent someone from falling through the hole, or be offset preventing someone from walking into the hole
     - Wire rope guardrails must be flagged with highly visible materials at least every six feet
     - Explanation of a guardrail includes:

       Top Rail – is secured to a guardrail's vertical posts and must:
       - Be at least ¼ inch thick to prevent cuts and lacerations
       - Be 39-45 inches from the working surface
       - Withstand at least 200 lbs. of force

       Mid-Rail – is secured to the guardrail's vertical posts and must:
       - Be installed when there are no walls at least 21 inches high
       - Withstand at least 150 lbs of force

       Toe Board – barrier along the floor or base of a platform that keeps materials from falling over the edge

     Safety net systems – designed to catch a person and break his or her fall. OSHA requirements include:
     - Install the net as close as possible below the working surface
     - Place the net no more than 30 feet below the working surface

- Confirm that the net can absorb the force of a falling 400-pound bag of sand
- Verify the net has a border rope with a minimum strength of 5,000 lbs.
- Inspect the net every week for damage and after any event that could damage them
- Remove any potentially dangerous items immediately
- Use OSHA's formula to determine if the net sufficiently covers the working surface

Personal fall arrest (PFA) systems – is a form of protection that involves the safe stopping of a person already falling. There are two types:

- General fall arrest such as safety nets or
- Personal fall protection systems such as lifelines which consists of an anchor, connectors, and a full-body harness that work together to break a fall.

Worker must wear a full-body harness when working:

- On a suspended scaffold 10 feet or higher above the working surface
- In a bucket truck or aerial lift

PFAS consists of an anchor, full body harness, and connector. Many PFAS also include a deceleration device which is a subsystem that dissipates the forces associated with a fall arrest event

- Anchor or anchor connector – provides a secure point of attachment for lifelines, lanyards, or deceleration devices
  - Must support at least 5,000 lbs. per worker attached to it.
  - Be independent from any anchor supporting or suspending platforms.
- Connector – connects different parts of the PFA's together
  - Be made of steel or equivalent materials with a corrosion-resistant finish and smooth edges.
  - Use D-rings and snap hooks with a minimum tensile strength of 5,000 lbs.
- Full-body harness – consists of various straps secured on a worker to distribute the fall arrest forces over the thighs, pelvis, waist, chest, and shoulders

When working with a PFA be sure to:

- Inspect your PFAS for damage each time before you wear it. If there are defects, or if someone fell using the equipment, do not use it and remove this PFAS from service.
- Make sure that vertical lifelines or lanyards have a minimum breaking strength of 5,000 lbs. and cannot be cut or abraded.
- Attach each worker to his or her own vertical lifeline.
- Verify that the webbing used for ropes, lifeline straps, lanyards, and harnesses are made of synthetic fibers.

Properly putting on a PFA

- Hold on to the top shoulder straps or the D-ring on the back and check to ensure that no section of the harness is twisted or tangled
- Grasp the shoulder straps and slip into the harness as if you were putting on a jacket. Check to ensure that

each shoulder strap lays flat against the body, and that there are no twists in the material

- Buckle the chest strap by connecting the male buckle to the female buckle. When it is secure, adjust the chest strap until it rests comfortably across the chest
- If the harness has a belt attachment, buckle and adjust the belt. Inspect the harness to ensure that the belt passed through all the existing belt loops
- Reach behind your left leg and grasp the leg strap. Bring the strap between the legs and buckle securely. Repeat this process with the right leg.
- After you buckle both leg straps, double-check all straps to ensure they fit properly. The chest strap should rest approximately six (6) inches below the top of the shoulder, and the D-ring on the back of the harness should rest between the shoulder blades.

  - Employers may choose to use a PFA, instead of a guardrail, when workers are on a supported scaffold more than 10 feet above the working surface

- Safe ladder usage to prevent a fall

  Choosing the right ladder for the job.

  Tying the top and bottom of the ladder to fixed points when necessary.

  Keeping your hands free of carrying tools or other materials when climbing a ladder