OSHA

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Training and Education Material

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Developing Fall Protection Training Materials for Water and Utility Operators and Construction Laborers

Source:
Centers for Disease Control and Prevention (CDC)
The National Institute for Occupational Safety and Health (NIOSH)
Location: North Carolina

Summary: On February 22, 1990, a 34-year-old male carpenter died after falling 11 feet from a garage roof. Prior to the incident, the walls of the garage had been finished with brick veneer, the roof trusses were covered with sheets of plywood, and the frame work for a dormer, which was located on the apex of the garage roof, had been completed. On the day of the incident, the victim and a co-worker were assigned the task of boxing up (i.e., closing in, by nailing sheeting to studs or otherwise encasing) the dormer. The men climbed a ladder to the roof, ascended the roof to the dormer, and positioned themselves on opposite sides of the dormer. The victim apparently slipped or tripped, fell to a sitting position, and slid feet-first down and off the edge of the roof. He struck the back of his head on the brick veneer garage wall upon landing at ground level. The victim was pronounced dead approximately 24 hours later in the local hospital.

Description of Accident: On the morning of the incident, a total of 10 workers (brick masons, laborers, and carpenters) were continuing work on the structure at different locations. The victim and a co-worker had been assigned to complete boxing up the dormer located on the apex of the garage roof. The roof had a 5:12 pitch (i.e., the roof rose 5 inches for every 12 feet in length) with bare plywood sheeting covering the roof trusses. The edge of the roof was approximately 11 feet above the ground.

Prior to the incident, the walls of the garage had been finished with brick veneer, the roof trusses were covered with sheets of plywood, and the frame work for a dormer, which was located on the apex of the garage roof, had been completed. On the day of the incident, the victim and his co-worker climbed a ladder to the garage roof and proceeded to the dormer. The workers positioned themselves on opposite sides of the dormer and started to work. Exactly what happened is unknown, but the victim either slipped or tripped, fell to a sitting position, then slid feet-first down the plywood covered roof and fell off the roof edge. The victim fell approximately 11 feet to the ground where he struck the back of his head against the brick veneer garage wall. The jobsite foreman, who was approximately 20 feet away talking with a mason, saw the victim fall and strike the ground. The foreman told the mason to telephone for help. An emergency medical unit arrived in less than 5 minutes. They stabilized the victim and then transported him to the local hospital. The victim was pronounced dead approximately 24 hours later.

Learning objectives:

a. By the time the trainee completes the training, they should be able to understand how unsafe working conditions might lead to fall injuries or fatalities similar to the North Carolina incident.
"Each employer -- shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees" "OSH ACT-KNOW YOUR RIGHTS"

b. The purpose of this lesson is to provide the trainee with information that will enable them to further recognize major fall hazards and sets forth requirements for employers to provide and implement fall protection systems at construction worksites. "OSHA Fall Protection" "We have all heard the expression - 'it's not the fall that's hurts but the sudden stop at the end'. Think of a fall as *"…a sudden, unanticipated descent in space driven by gravity"*. Although this may not *sound* severe, the consequences are often disabling - or deadly. It takes most people about 1/3 of a second to become aware of a fall. It takes another 1/3 of a second for the body to react. A person can fall up to 7 feet in 2/3 of a second." "Fall Hazard Manual by UAW"

Questions:

1. What unsafe actions caused this accident to happen?
   Choose all that apply:

   a. A pre-job site safety plan was not conducted to identify, evaluate and communicate the potential fall hazards.
   b. Failure to identify which personal protective equipment was required (i.e. safety belt, lifeline and lanyard) to employees exposed to fall hazards.
   c. Employer failed to enforce fall protection measures.
   d. Employer failed to develop, implement and enforce a comprehensive safety program (i.e. incorporating safety training program and the proper selection of PPE).

2. What actions could be taken in order to avoid the fall hazard?
   Choose all that apply:

   a. Conduct a worksite safety plan to identify, evaluate and communicate potential fall hazards before working at heights greater than 6 feet above a lower level where leading edges are under construction.
   b. The employee should be adequately trained in personal fall arrest systems, covers, guardrails systems with toe boards, ladders, safety nets systems to avoid fall hazards.
   c. Employer should be enforcing fall protection measures for all employees.
   d. Guard rail systems should have been constructed and maintained at the leading edge.
   e. Personal fall arrest system inspected and donned before use.
   f. Installed anchor point and equipment in place before construction work begins.
   g. Ensure ladder is properly installed with 1/4th the distance out from the building.

Exercise:

The class trainees will be divided into groups to participate for this exercise. The groups are expected to communicate with one another to complete the task related to each photo illustration. During your observations first identify and list the risk fall hazards.

Identify and list all the fall hazards:

1._____
2._____
3._____
4._____
5._____
6._____

Classroom exercise-inspect and record a full body harness, lanyards, tie off adaptors, hooks and carabineers and anchorage plates:

Inspection Checklist/Logs
JOB
SITE:_____

Full Body Harness

Harness Model:_____Manufacture Date:_____

Serial Number:_____Lot Number:_____Purchase Date:_____

Comments:_____
_____
_____
_____
_____

General Factors	Accepted	Rejected	Comments
1. **Hardware:** (Includes D-rings, buckles, keepers, and back pads) Inspect for damage, distortion, sharp edges, burrs, cracks and corrosion			
2. **Webbing:** Inspect for cuts, burns, tears, abrasion, frays, excessive soiling and coloration			
3. **Stitching:** Inspect for pulled or cut stitches.			
4**. Labels:** Inspect, make certain all labels are securely held in place and legible.			
5. Overall Disposition:			INSPECTED BY:_____ DATE INSPECTED:_____