

Sandia National Laboratories

Construction News Sense



Ladder Safety Depends on You

Each year more than 130,000 people in the United States visit an emergency room and more than 300 people die because of a ladder-related injury. That is almost one fatality each day of the year in which ladder use was a major factor in the accident, a mind-boggling number!



A ladder is not a complex apparatus, nor does it require a great amount of skill or experience to erect or use. It is a valuable tool that often provides the only means of accessibility to an isolated location. When a ladder is used correctly, the exposure to the worker is generally minimal. The key is to use the ladder correctly, or a needless accident can occur. This is why ladder safety depends on **you!** **You** must decide to use the correct ladder for the task, and use it correctly. There is an assortment of ladders to choose from, so **you** must make the choice of ladders based on the task being performed. Sometimes workers do not know that the ladder being used is not the best choice for the task, and other times the worker knows the ladder is not the appropriate one, but takes an unnecessary and unacceptable risk for convenience. Occupational Safety and Health Administration (OSHA) 29 CFR §1926.1060 require employ-

ers to provide a training program that clarifies ladder safety requirements for workers to assist them in making the correct ladder selection and use choices. The regulation also requires a competent person be available to provide the training, periodically inspect all ladders for defects after any occurrence, and provide ladder safety oversight. While not all-encompassing, the following list of safety precautions can help **you** choose the right ladder for the task:

- Ensure the ladder's load rating supports the maximum weight (user plus material).
- Inspect the ladder for defects before use.
- Never use a stepladder in lieu of an extension ladder to access an upper landing surface.
- Do not stand on the top or top step of a stepladder.
- Ensure that an extension ladder extends at least three feet above the top of the working surface.
- Ensure that extension ladders are positioned at a 4 to 1 angle and secured to a rigid support at the top to prevent movement.
- Maintain at least a three-point contact using at least one hand to grasp the ladder when ascending or descending.

- Face the ladder when ascending or descending.
- Ensure that ladders used in the vicinity of exposed energized electrical equipment are made of a nonconductive material such as fiberglass.
- Use a ladder on a stable and level surface unless it can be secured to prevent displacement.
- Do not exceed your limitations or capabilities.

Ladders are often essential to completing a task in the safest manner, but they can cause serious injury. Selecting the safest ladder for the task and using it correctly are both choices **you**, the user, must make. Ladder safety depends on **you**.

Rick Pope (4842)

REMINDER

QUARTERLY CONSTRUCTION SAFETY SEMINAR

Date: April 27 2011
Time: 2:00 - 4:00 P.M.
At: Mountain View Club
Room: Sandia 1

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Publisher: Linda Sells, Org. 04842

Lessons Learned: From the Sandia Laboratories ES&H Lessons Learned Program

Safety Glasses Prevent Possible Eye Injury

Wearing appropriate personal protective equipment (PPE) is an essential and sometimes critical part of safety. It is usually the last—and sometimes the only—barrier between a hazard and possible injury.

Discussion of Activities:

A Lawrence Livermore National Security worker was injured recently while operating the compactor on a trash truck. His safety glasses protected his eyes, and he only received a minor laceration above his right eye and on the bridge of his nose when his safety glasses were pushed against his face. He received first aid and was released back to work.



Analysis:

While the truck's compactor was in operation, it ejected a piece of two-inch-diameter PVC pipe. The pipe ricocheted off the inside surface of the left (driver's side) wall and struck the right-side shield of the employee's safety glasses. The pipe chipped the lens and jammed the side shield against the frame of the safety glasses, but the pipe did not strike the employee. The compactor controls

are at the rear end of the truck's right (passenger) side, and the operator was in the correct location during compactor operation as specified by his training. The operator was experienced and he was wearing all the PPE specified for this work. He responded to the incident correctly by promptly securing the truck, seeking first aid, and reporting the incident.

As a result of this event, the employee and his supervisor reviewed this operation to determine how operator safety could be improved. They agreed upon two changes that were implemented in on-the-job training:

1. The operator will stand to the side of the truck during compactor operation to eliminate direct exposure to the opening of the compactor.
2. The operator will use the convex mirror already mounted on the rear of the truck to monitor compactor operation. The need to monitor the compactor was the reason the original training required that the operator stand behind the truck during compactor operation.

Recommended Actions:

1. When you are at or away from work, always wear all the PPE that is specified by the work instructions and is appropriate for the activity.
2. Do not substitute one PPE item for another unless authorized. For example, there are several types of eye protection equipment, and each type works well for the specific hazards it addresses. Almost none of it is interchangeable.
3. Ensure that the PPE being used meets the applicable specifications for the task, is in good condition, and is the correct size.
4. Understand that more PPE is not necessarily better. Inappropriate multiple layers or PPE for hazards that do not exist during that activity can reduce your effectiveness in performing the task, introduce additional hazards, increase risk, and compromise safety.
5. Practice "defense in depth" when it comes to safety.

Change Conditions Prompt Questioning Attitude

The execution of work does not always go as planned and when conditions change, employees are trained to stop and ask questions. This is a critical yet positive attribute of a strong work control process.

Discussion of Activities:

During predemolition activities at Oak Ridge, contract workers were using an Evolution saw to cut a piece of carbon steel plate. The workers suddenly noticed that the cutting action was producing sparks and they immediately stopped work. The Radiation Control Technician (RCT) examined the PPE worn by the worker who was operating the saw and noted several spots where the sparks had melted the PPE at the front midriff. The workers came out of the containment and the RCT performed a whole-body frisk. No personal contamination was detected. Members of the work crew notified their supervisor and a post-job brief was performed. The work crew and project staff determined that the PPE did not adequately protect the worker. As a result, the saw was removed from service, and work continued using other methods. The workers were commended for stopping work and questioning the recommended work controls.

Analysis:

The Evolution saw was selected because in the past it had not produced sparks while cutting mild steel. In addition, the cutting action was observed earlier on the same steel and no sparks were observed. Because of these factors the activity was declared a non-hot work activity, and therefore the PPE provided was deemed appropriate. The steel plate was later examined, and a different type of steel welded to the plate was found; this high-carbon steel was the reason sparks were generated.

Recommended Actions:

1. Ensure equipment is appropriate for activity.
2. Reemphasize the need to stop work when conditions change.
3. Ensure proper PPE is worn when using an Evolution saw.