

## Keene State College Fall Protection Program

### **I. Purpose/Scope**

Fall protection is best attained through engineering controls - modifying the work environment in order to reduce the risk of falling. Where possible, floor openings shall be guarded, railings installed or areas fenced off prior to working. Work elevations greater than 4 feet must be protected by guard or hand rails.

When these types of controls are neither sufficient nor feasible, a fall arrest or protection system will be required in accordance with Occupational Health & Safety Standards.

The following procedures at Keene State College require the use of fall protection protective equipment:

- Whenever you are working six feet above another level (step ladders excluded)
- When ever you are working from a bucket truck

Only approved fall arrest equipment shall be used. Body belts, safety straps, lanyards, lifelines and body harnesses shall be inspected before use each day to determine that the equipment is in safe working condition. Defective equipment, or equipment exposed to a fall shall be immediately removed from service. No more than one employee may be attached to any one vertical lifeline. The fall arrest system must not allow the employee to free-fall anymore than six feet, or to another level.

KSC follows the OSHA construction standard for the regulation of ladder and scaffold use as a guideline when personnel are involved in construction activities. Strict compliance with OSHA 1926.453 Subpart L (Scaffolds) and 1926.1053 Subpart X (Ladder safety) is mandatory during construction at KSC. General OSHA standards for ladder or scaffold use (29 CFR 1910.25 and 1910.26) are required during non-construction activities. Adhering to these regulations will prevent a fall, one the leading cause of occupational injuries.

### **II. Responsibilities**

#### EHS Coordinator

- Provide necessary training to affected employees
- Assist in the evaluation of fall hazards and selection of personal fall arrest system equipment

### Physical Plant supervisors

- Identify employees who may be exposed to fall hazards including but not limited to:
  - Maintenance personnel (electricians, painters, etc)
  - Grounds personnel (arborist)
  - Any full time, part time, or volunteer working six (6) feet off from working level
- Analyze all elevated tasks as to fall protection needs
- Ensure adequate fall protection systems are provided
- Make responsible use of primary fall protection systems such as scaffolds, aerial lifts, personnel hoists, etc.

### Employees

- Attend required fall protection training
- Visually inspect fall arrest devices prior to every use and record the date on a permanently attached inspection tag
- Report any unsafe condition to supervisor

## **III. Procedures**

Prior to beginning work in any area or on any device where fall hazards exist, a pre-work check must be completed.

### Stairs

- 1 All required covers or guardrails must be in place.
- 2 All handrails or guardrails are in place on stairways.
- 3 All treads and risers on stairs are in good repair.
- 4 Non-slip surfaces are in place on stairs.
- 5 All stairs meet OSHA and ANSI specifications for design and safety.

### Ladders

- 1 Gripping safety feet in place and secure on ladders.
- 2 Wooden ladders are coated with suitable protective material.
- 3 All parts and fittings on ladders are secure.
- 4 Non-slip surfaces are in place on ladder rungs.
- 5 When setting ladder up, footing of ladder is secure on a firm, level, and non-skid surface and top of ladder is placed against a solid, stationary object.
- 6 All ladders meet OSHA specifications for design and safety.

### Loading Dock Areas

- 1 Dock blocks are up and in place when dock is not in immediate use.

- 2 Only trained loaders and unloaders perform loading and unloading duties in that area.
- 3 Dock door is kept closed when a truck is not backed against it.

#### Platforms

- 1 Guardrails are in place and securely attached.
- 2 Toeboards are in place and secure.
- 3 All platforms meet OSHA specifications for design and safety.

#### Floor & Wall Openings

- 1 All floor and wall openings are safely covered or blocked from access.
- 2 If not safely covered and blocked from access, the opening has someone assigned for constant attendance to it.

If the situation calls for use of fall protection devices such as harnesses or lanyards because the fall hazard cannot be eliminated via engineering controls, then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work. Use of fall arrest systems is outlined below.

#### **A. Fall Arrest Systems**

1. Employees shall use a fall arrest system with continuous attachment when there is a fall hazard of six (6) feet or greater.

**Exceptions:** Areas that are protected by properly installed guardrail systems do not fall into this category.

Ladders that are less than twenty (20) feet are exempt from this requirement.

2. The primary fall arrest device shall be a Class III body harness. The lanyard anchorage point must be such that the maximum fall distance is four (4) feet or six (6) feet if the lanyard is used in conjunction with an ANSI approved shock absorber. Shock-absorbing lanyards together with a Class III body harness shall meet a force limit of 1800 pounds.
3. Personnel must work in teams of two or more where a potential fall hazard exists.

#### **B. Lanyards**

1. Approved safety lanyards shall be a minimum of ½ inch thick nylon or equivalent, with a maximum length to provide for a fall of no greater than six (6) feet. Lanyards will have double locking snap hooks. Minimum breaking strength requirement for lanyards is 5,000 pounds.

2. If a lanyard made of synthetic fibers is subjected to hot surfaces, an insulated cover must be used for protection. Lanyards must be protected against sharp surfaces.
3. Fall arrest devices subjected to impact loading from a fall shall be removed from service and destroyed.

**The technical specifications of an approved personal fall arrest system per 29 CFR 1926.502 are as follows:**

- D-rings and snap hooks are to have a minimum tensile strength of 5000 pounds. A proof test of 3600 pounds is required.
- Lanyards and lifelines are to have a minimum breaking strength of 5000 pounds.
- Lanyards are not to exceed six feet in length.
- Self-retracting lifelines and lanyards are to have a strength of at least 3000 pounds and limit free fall to two feet or less.
- Anchor points for fall arrest systems are to be capable of supporting at least 5000 pounds per employee when the system is designed, installed (temporarily or permanently), and used under the supervision of a qualified person.
- Personal fall arrest systems are to limit the maximum arresting forces to 1800 pounds with a full body harness.
- The maximum free fall distance is six feet for all systems.
- The maximum deceleration distance is 3.5 feet.
- Personal fall arrest systems are to have sufficient strength to withstand twice the potential impact energy of the falling employee.
- Impacted components are to be removed from service.
- Prompt rescue must be provided for personnel who have fallen.
- Personal fall arrest systems are to be inspected prior to each use.
- Lifelines subject to cutting or abrasion are to be a minimum of 7/8-inch wire core manila rope. All other lifeline applications are to use a minimum of 3/4 inch manila rope or its equivalent.

### **C. Ladders**

When employees are working off portable ladders and the task requires work "outside the confines of the ladder", a fall arrest system must be used.

### **D. Aerial Lifts**

Personnel working from or riding in any aerial device shall wear a fall arrest system (including full body harness) with the lanyard attached to the boom or basket.

## **E. Fall Protection General Guidelines**

Every effort must be made to protect others from hazards associated with items falling from overhead work areas.

- Equipment and materials must not be stored within four (4) feet of an unprotected edge
- Toe boards (capable of withstanding a force of 50 lbs) will be used where possible
- Hard hats will be required when overhead work is being performed and there is a hazard associated with falling items.

## **F. Inspections**

Fall arrest devices shall be visually inspected for defects prior to use.

Fall arrest devices shall be inspected when new and every six months thereafter for the following conditions:

- Cuts or abrasions
- Burns
- Excessive wear
- Loose splices
- Defective hardware
- Distorted thimbles

The date of each inspection shall be recorded on an inspection tag and permanently attached to the fall arrest device.

