

**Chapter 290, Health and Safety Services**

**Section 88, Fall Protection**

**Date:** 10/17/16

**Supersedes:** New

**Responsible Department:** Environmental Health and Safety

**Source Document:** University Policy on Management of Health, Safety and the Environment

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**I. Purpose**

This section outlines the policy and responsibilities for the safety of individuals involved in maintenance and renovation work or construction activities exposed to a potential fall, in accordance with Cal-OSHA regulations, where conventional fall protection is not applicable.

**II. Definitions**

- A. Anchorage—a secure point of attachment for lifelines, lanyards or deceleration devices able to withstand 5000 pounds of force per person for fall arrest and 1000 pounds for travel restraint.
- B. Construction activities—construction, alteration, demolition, or repair of buildings, structures, or other real property performed at UC Davis contractors are not employee “work activities”.
- C. Fall protection system—system of criteria, procedures and equipment to protect persons from injuries due to a fall that consists of both fall prevention and personal fall arrest.
- D. Rope Access- work performed while entirely suspended from a rope or rigging system.
- E. Suspension trauma—unconsciousness or other symptoms caused by remaining suspended in a fall protection harness for an extended period of time.
- F. Trigger heights—heights that require fall protection systems (prevention, arrest, restraint, positioning)
  - 1. 4 feet or more above adjacent floor or ground level during maintenance activities.
  - 2. 6 feet or more above lower levels during construction activities.
  - 3. When working 15 feet or less from an unprotected leading edge.
- G. Additional terms are defined in California Code of Regulations (CCR), Title 8, sections 1504, 3210, 3212, 3270 and 3277.

**III. Policy**

- A. Departments either designing, building or renovating structures, and individuals involved in maintenance, rope access or construction activities exposed to a potential fall hazard at greater than the trigger height must comply with all elements of the Fall Protection Program for fall prevention and protection.
- B. Personal fall arrest equipment anchorage must be installed and capable of supporting at least 5,000 pounds per employee attached.
- C. Individuals working from a telescoping or articulating boom lift must wear a personal fall arrest system attached to the manufacturer’s designated anchorage point. Scissor lifts require fall restraint systems only if the manufacturer has provided an anchorage point within the guard rail.

- D. Individuals working at heights greater than the trigger heights are required to take initial training as a fall protection authorized user and refresher training every 2 years.
  - 1. Each department must have at least one person trained as a fall protection competent person.
  - 2. As a minimum, the training from a department's competent person or EH&S must include a recognition of fall hazards, the correct way to use, inspect, and maintain fall protection equipment, standard operating procedures developed within the department, and responsibilities of employees and departmental supervision.
- E. Guardrails
  - 1. Excavations over 6 feet in depth and wider than 30 inches require standard guardrails for walkways or bridges where workers or equipment are required or permitted to cross over.
  - 2. Guardrails must be installed per Cal-OSHA design standards and specifications on open sides of unenclosed elevated work locations (i.e. roof openings, open sides of landings, platforms, ramps, wall, roof or floor openings, skylights, etc.) when more than 30 inches above the floor, ground or other level of a building and more than 4 feet for unprotected sides of elevated work locations (not buildings).
- F. Ladders must meet design standards per American National Standards Institute (ANSI) 14.1 and Cal-OSHA fall protection requirements for maximum length, weight rating, angle of use and required overhang, inspection, maintenance, ascending/descending, use around electric cables and employee training. Alternative methods such as scaffolding, scissor lifts, or boom lifts should be used when the task places the worker at risk. Ladder cages are not approved for use at unless authorized by the EH&S department.
- G. Personal fall arrest, restraint or positioning systems
  - 1. ANSI Z359 or engineer approved systems are required for individuals working greater than the trigger heights, through shaft ways and openings, sloped roof surfaces steeper than 4:12, or other sloped surfaces steeper than 40 degrees not otherwise adequately protected.
  - 2. Harnesses must be inspected prior to each use and at least twice per year by a competent person, who is capable of identifying hazardous or dangerous conditions in any personal fall arrest system and in their application with related equipment.
- H. Roof jack systems, crawl boards, catch platforms, eave barriers, scaffolds plus runways and ramps must meet Cal-OSHA design specifications on roofs from 3:12 to 7:12 including personal fall protection requirements.
- I. At greater than 25 feet, where conventional personal fall arrest systems, restraint or positioning systems are impractical, the exterior or interior perimeter of the structure must be protected by a safety net greater than 8 feet horizontal and 10 feet vertical.
- J. Scaffolds must meet Cal-OSHA design, construction, erecting, dismantling, load limits and deflection, connections and overhang, allowable slope, working surface, and use requirements.
- K. Rescue Plan
  - 1. Whenever a free fall distance could result in a worker left in a suspended position, a written rescue plan is required to be developed and maintained.

2. To prevent the effects of suspension trauma, the plan must provide for a timely rescue and include self-rescue, a buddy rescue, or contacting the Fire Department before work begins, to arrange for timely response by emergency responders.
- L. Where conflicts exist between the California Code of Regulations and the ANSI Z359 Fall Protection Code, the more protective measure must be employed.

#### **IV. Responsibilities**

##### **A. Department Heads**

1. Ensure supervisors adhere to this policy and that fall rescue plans are established and followed.
2. Incorporate requirements into designs for new retrofitted equipment plus future and existing structures where known or predictable fall hazards are expected to occur.
3. Implement a written departmental fall protection program and makes the UC Davis Fall Protection Manual made available to employees.
4. Ensure workers receive initial and refresher training by a competent person.
5. Provide appropriate fall protection equipment and a safe work environment for staff.

##### **B. Design and Construction Management Project Managers**

1. Exchange fall hazard and protection information in pre-construction meetings.
2. Verify contractors and subcontractors have completed the appropriate training and have a written rescue plan in place before exposure to a fall hazard.
3. Confirm the fall protection methods contractors will follow.

##### **C. Environmental Health & Safety (EH&S)**

1. Develops and maintains the written Fall Prevention Program which includes the Fall Protection Manual and SafetyNet #133.
2. Provides technical support and consultation to departments to interpret requirements and establish safe practices.
3. Develops and provides fall protection training upon request.
4. Ensures inspection of fall arrest or restraint systems are performed and recorded by a competent person.

##### **D. Supervisors**

1. Identify existing or potential fall hazards and determine applicable standards, and precautions.
2. Ensure workers complete training prior to working at elevated heights.
3. Monitor workers while engaged in work at heights, protection methods used and at-risk behaviors and implement corrective actions.
4. Ensure fall rescue plans are incorporated into work plans if the free fall distance could result in workers left in suspension position.
5. Ensure that fall arrest equipment (harnesses, lanyards, etc.) inspections are performed on an ongoing basis.

E. Workers

1. Complete the required initial and ongoing training requirements.
2. Perform visual inspection of fall prevention, arrest, and rescue systems (including personal fall arrest equipment) before each use.
3. Must work with supervision and use the following hierarchy of control of order for managing the hazard; elimination or substitution, passive fall protections (i.e. guardrails), fall restraint, fall arrest, and administrative controls (i.e. Controlled Access Zones).
4. Follow all policies, restrictions, training and safe operating procedures.
5. Report any unsafe conditions to their supervisor.

V. Further Information

For further information or guidance, contact Environmental Health and Safety at (530) 742-2599.

VI. References and Related Policies

A. [California Code of Regulations](#)

1. Title 8, Section 1504, Construction Safety Definitions.
2. Title 8, Section 1637, Scaffolds—General Requirements.
3. Title 8, Section 1669, Construction Safety Orders, Fall Protection.
4. Title 8, Section 1670, Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices.
5. Title 8, Section 1671.1, Safety Nets.
6. Title 8, Section 1710, Elevating Work Platforms and Devices.
7. Title 8, Section 1724, Roofing Operations and Equipment.
8. Title 8, Section 1731, Construction Safety, Roofing Operations.
9. Title 8, Section 3209, Standard Guardrails.
10. Title 8, Section 3210, Guardrails at Elevated Locations.
11. Title 8, Section 3211, Wall Openings.
12. Title 8, Section 3212, Floor Openings, Floor Holes and Roofs.
13. Title 8, Section 3276, Portable Ladders.
14. Title 8, Section 3299, Powered Platforms and Equipment for Building Maintenance.
15. Title 8, Section 3622, Mobile Ladders and Scaffold Stands.
16. Title 8, Section 3642, Elevated Work Platforms.

B. [American National Standards Institute \(ANSI\)](#)

1. ANSI 14.1, Ladder Safety.
2. ANSI/ASSE Z359, Fall Protection Code.

C. [UC Office of the President, University Policy on Management of Health, Safety and the Environment.](#)

- D. [UC Davis Policy & Procedure Manual](#)
1. Section 290-15, Safety Management Program.
  2. Section 290-86, Hazardous Operations.