



Fall Protection Program

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1. Program Description

Fall protection is a method of control for fall hazards that either prevents a person from falling or slows a person to a stop before they contact the ground.

UC Riverside has a Fall Protection Program in place to help supervisors and employees:

- Identify work situations that **require** fall protection
- Implement and document Fall Protection Safety Plans
- Select and use appropriate fall protection systems

Fall protection is **required** at UCR wherever the potential exists to fall 4 feet or more during work activities.

Departments with employees working in these situations must follow the UC Riverside Fall Protection Program requirements.

If you have questions about how to implement the UCR fall protection program, choose equipment for purchase, or developing a safe work procedure for your work area please contact EH&S at ehs@ucr.edu or (951) 827-5528 for assistance.

2. Scope

This Fall Protection Program was developed to provide UCR employees with the necessary information to identify work situations that require the use of fall protection, the proper use of fall protection equipment, and the required documentation of this information. This helps to ensure the safety and health of all employees at UCR.

This Fall Protection Program is designed to assist departments in protecting their employees from fall hazards and identifying potential fall hazards that are likely to be encountered in the course of work duties on any UCR-owned or affiliated property. ALL employees exposed to fall hazards must complete the program training requirements based on their exposure to fall hazards in their work area prior to beginning work in those areas.

3. Department Requirements

Department heads with employees who are currently using fall protection systems or may potentially encounter fall hazards during their work duties are required to:

- Designate supervisors/ project managers who will be responsible for implementing a Fall Protection Safety Plan for every project that requires fall protection
- Provide administrative and financial support for fall protection

For extremely hazardous areas, hire a contractor who specializes in fall-protected work.

Contact EH&S at ehs@ucr.edu or (951) 827-5528 for assistance.

4. Implement a Fall Protection Safety Plan

Supervisors/project managers must develop and implement a fall protection safety procedure for **each job that requires fall protection:**

- Use the **Fall Protection Safety Procedure form** (coming soon) to:
 - Identify and designate employees who require fall protection for this specific job
 - Conduct a fall hazard analysis
 - Describe fall protection systems to be used
 - Document equipment inspection
 - Describe the rescue plan
 - Get approval signatures
- Ensure that employees are informed, trained, and provided with the appropriate fall protection equipment.
- Supervisors should be familiar with the applicable California regulations, the UC Riverside Fall Protections Program, UCR campus policies, and prudent safety practices to protect themselves and their fellow employees.

- Ensure the equipment provided is adequate to protect employees from fall hazards.
- Ensure all employees have had the required training based on their role.
- Prohibit employees from providing and using his or her own fall protection equipment.

5. Responsibilities

All Employees:

- Comply with this program and any further safety recommendations provided by supervisors and/or EH&S regarding the Fall Protection Program.
- Conduct assigned tasks in a safe manner and properly wear and use all fall protection equipment.
- Report any unsafe or unhealthy work conditions and job-related injuries or illnesses to the supervisor immediately. Incidents, Injuries, and Near-Misses should also be reported to EH&S using the [online reporting form](#) or by calling 951-827-5528.
- Inspect all fall protection equipment being used prior to each use. Do not use any equipment which appears to be damaged or compromised in any way. Notify your supervisor immediately.
- Store all fall protection equipment properly following manufacturer's recommendations. Never store fall protection outdoors, in a hot vehicle, or overly dirty location. Keep harness in a gear bag to protect it.
- Clean harnesses when needed following manufacturer's recommended procedure and cleaners.
- Refrain from bringing or wearing any personally owned fall protection equipment. Personal equipment is not allowed except with EH&S specific written approval.
- Ensure all equipment issued is adequate protection from the actual hazards in the workplace

- Never work alone when using fall restraint or fall arrest equipment.
- Always review the rescue plan and test communication (radio or cell) prior to beginning work.

Supervisors:

- Develop fall protection procedure for each task where fall hazards are present. Consult with EH&S when fall arrest or restraint are required.
- Hold pre-job meetings prior to beginning tasks where employees must wear fall restraint or fall arrest.
- Document daily equipment inspections and pre-job meetings.
- Never allow workers to work alone when using fall arrest or fall restraint.
- Verify training for employees before assigning work at height.
- Report any unsafe or unhealthy work conditions and job-related injuries or illnesses to tour supervisor and EH&S immediately.

EH&S:

- Maintain the UCR Fall Protection Program document.
- Conduct fall protection training.
- Maintain required inspections for permanently installed fall protection systems.
- Provide guidance for departments in development of fall protection procedures.
- Periodically audit fall protection procedures.
- Assist departments with selecting equipment.

6. Fall Protection Locations

UC Riverside has identified, at a minimum, the following types of locations where fall hazards exist:

- Rooftops with a parapet wall less than 42" within 6 feet of the roof edge or other fall hazards present.

- Within 6 feet of unprotected platform edges, unguarded skylights, hatches, holes, ladder access openings, etc.
- Exterior and interior equipment platforms, catwalks, antennas/towers, etc.
- Exterior and interior fixed ladders above 20 feet
- Mezzanine and balcony edges
- Open excavations, pits, vaults, tanks, manholes, or other potential confined spaces
- Large tank and silo rooftops
- Tasks requiring the use of scissor lifts, bucket trucks, or other articulating personnel lifts
- Tasks requiring employees to work outside the vertical rails of ladders (i.e., painting, stairwell light bulb replacement)
- Scaffolding erection – 7.5 feet in height or greater
- Elevator car, hardware, and shaft inspections
- Gym or theater – mezzanine/catwalk areas
- Stages over 36" require warning lines and an administrative plan for safe use.
- Theater orchestra pits
- Whenever an employee must step outside the catwalk additional fall protection (i.e., body harness, self-retracting lifeline, or rope grab system) must be used.

*NOTE: Fall protection is **not** required if an employee is on a low slope roof (less than 4:12 pitch) for an inspection/observation only and does not come within 6' of a leading edge, unprotected skylight, open roof access hatch, or other floor openings that present a fall hazard.*

7. Fall Protection Systems

Fall protection systems include all methods of protecting workers from falls from heights. These are divided into two categories: Passive and Active. Passive protection is a permanently installed protection that does not

require additional precautions, *i.e. railings*. Active protection involves the use of a fall protection harness or temporary control. The appropriate fall protection system will be determined by the job to be performed and the location.

Fall protection systems include:

- An articulating personnel "boom" lift restraint system where the operator wears a full-body harness attached to the manufacturer's specified anchor point.
- Railings on a scissor or single-person lift.
- Guardrail with a toe board, mid rail, and top rail (permanent or temporary)
- Personal fall arrest/restraint systems:
 - Anchor points (rated at 5000 pounds per person)
 - Body harness
 - Connectors/carabineers (self-locking snap hooks)
 - Energy (shock) absorber
 - Restraint line or lanyard
 - Retractable lanyard
 - Rope grabs
- Engineered lifelines
- Ladder safety systems
- Safety monitoring systems
- Safety nets
- Warning lines
- 42" parapet walls
- Mechanical screening enclosures at a minimum 42" high and engineered to withstand 200 pounds of force.
- Hatch guards
- Skylight guards

- Secured hole covers

See [Fall Protection: Fall Protection Systems](#) for details.

8. Fall Protection for Aerial Work Platforms

Cal-OSHA requires the use of an additional fall protection system for boom lifts. Operators must wear a full-body harness and attach to a manufacturer-designated anchor point. Operators for scissor and single-person vertical lifts are not required to wear a harness but it is recommended if there is a manufacturer-designated anchor point in the lift. Not all lifts have them and you should never attach to anything but a designated anchor point.

There are recommended options for a fall protection system set up in a boom lift. Fall restraint is the safest setup and is preferred. There may be instances when fall arrest may be preferred.

NOTE: The use of a fall arrest system in a boom lift requires the following

- *The assurance that when fall arrest is used, the occupant will not contact a lower surface or freefall more than 6 feet.*
- *The employer has a rescue plan in place.*

If either of these requirements cannot be met, a fall arrest system cannot be used.

Option 1: Fall Restraint Using a Short Lanyard - *Preferred Method*

Comprised of a platform anchorage, belt or harness, and a lanyard connector, a fall restraint system prevents a fall of any distance from the AWP equipment. In the case of a boom lift, the forces from the “catapult effect” would not cause the occupant to be thrown from the platform but rather remain within the confines of the work platform.

The connection from the anchorage to the belt or harness is the lanyard. The length of the lanyard is critical in the ability of the system to prevent a fall. The location of the anchorage point on the AWP equipment and the height of the occupant is also critical in the determination of what length

lanyard is appropriate for restraint. A short-length lanyard may be used to obtain the necessary restraint of the occupant.

Option 2: Fall Restraint/Arrest Using a Lanyard with an Adjuster

Since the occupant(s) may use PFP equipment for different applications other than boom lift operation and need to move within the platform where appropriate, a lanyard with an adjuster may be the best option for some. Lanyards with adjusters are available in various lengths. When determining the length required, ensure that the shortest lanyard length will provide a fall restraint from the lanyard with an adjuster chosen. The maximum-length lanyard should be as short as possible at all times.

The lanyard with an adjuster allows the occupant(s) to have either a fall restraint system or a fall arrest system, depending on the adjusted length of the lanyard. When the lanyard with an adjuster is to be used as a fall arrest system, it is required that a deceleration device (commonly known as a shock absorber) be incorporated into the lanyard with an adjuster. The deceleration device would be in place while in restraint or arrest position.

Option 3: Fall Restraint/Arrest Self-retracting Lanyard (SRL)

One additional option is a self-retracting lanyard (SRL). The SRL selected must be one that the SRL manufacturer approves for use with the specific AWP equipment. Some SRLs are not designed to have the anchorage point below the connection point on the occupant(s). Read the requirements defined by the SRL manufacturer to ensure compliance with it before using the SRL. As with fall arrest systems, ensure that there is proper anchorage and clearance from lower surfaces. Note that when the AWP equipment is moving, the SRL must be adjusted to restraint mode.

9. Rescue Procedures

Supervisors must develop a rescue plan for each fall protection procedure and location. Prior to work beginning where fall protection is necessary, a rescue plan must be reviewed and discussed with all involved employees. Someone should be designated in advance to call 911 or radio dispatch for assistance to notify emergency services.

Attending personnel may attempt to rescue the fallen individual if they are still suspended with the use of lift equipment, ladders, and/or available

rescue equipment (if trained), where feasible and if safe to do so. All harnesses where a fall is possible must be equipped with trauma straps and attending personnel should coach the fallen employee in deploying them if possible.

In the event of a fall, notify the following people as soon as possible:

- 911, emergency medical services - Tell the dispatcher that the victim is suspended in a harness and give detailed directions on where the victim is located.
- Supervisor/Manager
- EH&S @ 951-827-5528

Employees involved in a fall should always be sent for a medical evaluation to determine the extent of injuries. Internal injuries are not always obvious but can be very serious.

All falls will be investigated by the employee's immediate supervisor and/or department manager and EH&S. The following documentation will be completed as part of the fall investigation:

- Interviews with staff and witnesses
- Employee injury/accident report (EFR)
- Supervisor injury/accident report (EFR)
- Corrective action outline/plan

10. Requirements for Contractors

Contractors working at UC Riverside must follow their own written Fall Protection Program and ensure that their program meets [Cal/OSHA requirements](#). Contractors are required to discuss Fall Protection strategies with all parties involved in the work to ensure safe interactions with other exposed individuals.

Contractors are not allowed to use UC Riverside fall protection equipment without express approval from the UCR Safety Engineer. This includes existing roof tiebacks, davits, horizontal lifelines, etc.

11. Training

Fall protection training is required for employees exposed to fall hazards. Training covers the recognition of fall hazards and methods to minimize them.

The three levels of training are as follows:

Awareness - Anyone working near a fall hazard of any type must have awareness training. This provides a general understanding of what fall hazards are and where they may exist. UCR has awareness training available for all employees in the UC Learning Center. Click here to take the course: [RI-UCSKSS0050-ECO Fall Protection](#)

Authorized Fall Protection User 4-Hour - Anyone who needs to wear a fall protection harness for their work tasks must complete a 4-hour in-person fall protection training. Contact EH&S Training for availability at ehstraining@ucr.edu

Competent Person Training - Training for advanced users who have the knowledge to assess anchor points, approval to setup non-certified anchor points, the authority to stop unsafe actions, and develop fall protection procedures. This is an in-person 16-hour training. Contact EH&S Training for availability at ehstraining@ucr.edu

Topics must be reviewed often to verify each employee has been trained, as necessary, by a competent person qualified in the following areas:

- The nature of fall hazards in the work area
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used
- The use and operation of guard rail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protective measures to be used
- The role of each employee in the safety monitoring system when this system is used
- The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection

- The role of employees in fall protection plans
- The requirements contained in applicable Cal/OSHA Standards

Re-Training

Fall Protection Refresher training will be required every 3 years or sooner if the supervisor or EH&S has reason to believe that any designated employee is not complying with the program, does not understand or possess the skill required by Cal/ OSHA standards. Retraining is also required in the following circumstances:

- Changes in the workplace Fall Protection Program render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an employee's knowledge or use of fall protection systems or equipment indicate the employee has not retained the requisite understanding or skill.

Note: Training records must be kept and contain the following:

- Name of employee trained
- Date of training and material covered
- Name of person who conducted the training

12. Resources

- [UC Riverside Fall Protection Program](#) (PDF)
- [Rooftop Fall Protection Decision Flowchart](#)
- [Glossary of Terms](#) (PDF)
- [Calculating Total Fall Distance](#) (PDF)
- Fall Protection Pre-Use Inspection
- [Fall Protection Use and Selection Guide](#)
- [3M Fall Protection Videos](#)

Fall protection equipment:

- [3M Fall Protection and Solutions](#) *Preferred manufacturer
- [DFP Safety \(DeWalt\)](#)
- [Fall Tech](#)
- [Guardian](#)

- [Honeywell \(Miller\)](#)
- [Petzl](#)
- [ISEA \(International Safety Equipment Association\)](#)

Cal-OSHA fall protection related regulations:

- [Fall Protection, CCR T8 1669-1672 Article 24](#), Cal/OSHA
- [Guard rails, CCR T8 3209 Article 24](#), Cal/OSHA
- [Personal Fall Protection, CCR T8 3299 Appendix A-D](#), Cal/OSHA
- [Positioning Device System requirements, CCR T8 1670 Article 24](#), Cal/OSHA
- [Safety Nets, CCR T8 Article 24](#), Cal/OSHA