

UC Irvine School of the Arts Working at Heights Program

Responsible Administrator: Senior Safety Specialist

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Summary: This section outlines the policy and procedures related to the Working at Heights Program that is administered through the Environmental Health & Safety (EH&S) Department.

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1. Program Description

The UC Irvine School of the Arts Working at Heights Program is a key component of this Unit's Injury & Illness Prevention Program as part of UCI's Safety on Site (SOS) program and supports the overall UC Policy on Management of Health, Safety and the Environment.

The Working at Heights Program is based on the most current version of ANSI/ASSE Z359.2 - 2017 Minimum Requirements for a Comprehensive Managed Fall Protection Program. This document will detail all known fall hazards within the facility along with equipment and procedures to work around these hazards safely. Details will include equipment usage, authorized personnel and rescue procedures

2. Scope

This program applies to all University employees who perform any duties on elevated work surfaces greater than six (6) feet above grade. Employees using devices to access elevated work areas are required to be trained and use safe work practices.

NOTE: Exceptions to the scope of this program

Employees may work without fall prevention:

- At the working sides of loading docks.
- At the exposed perimeters of theater stages.
- When climbing portable ladders up to 60 feet in length.
- When working on scaffolds up to 6 feet in height.
- When working on the edge of an excavation up to 6 feet in depth; or
- When the employee is on a low slope roof (slope less than 3:12 pitch or 14 degrees) for inspection or observation purposes only.

3. Definitions

Authorized Person — A person assigned by the employer to perform duties at a location where the person will be exposed to a fall hazard. An authorized person is required to receive training and to periodically demonstrate the ability to safely use the appropriate fall protection equipment.

Certified Anchorage — An anchorage for fall arrest, positioning, restraint, or rescue systems that a qualified person certifies to be capable of supporting the potential fall forces that could be encountered during a fall or that meet the criteria for a certified anchorage prescribed in this standard.

Competent Person — An individual designated by the employer to be responsible for the immediate supervision, implementation, and monitoring of the employer's managed fall protection program, who, through training and knowledge, is capable of identifying, evaluating, and addressing existing and potential fall hazards, and who has the employer's authority to take prompt corrective action with regard to such hazards.

Fall Protection — Any equipment, device or system that prevents an accidental fall from elevation or that mitigates the effect of such a fall.

Free Fall Distance — The vertical distance traveled during a fall, measured from the onset of a fall from a walking working surface to the point at which the fall protection system begins to arrest the fall.

Lanyard — A component consisting of a flexible rope, wire rope, or strap, which typically has a connector at each end for connecting to the body support and to a fall arrester, energy absorber, anchorage connector, or anchorage.

Maximum Arrest Force — The peak force measured by the test instrumentation during arrest of the test weight in the dynamic tests set forth in these standards.

Non-Certified Fall Arrest Anchorage — A fall arrest anchorage that a competent person can judge to be capable of supporting the predetermined anchorage forces as prescribed in these standards. Non-certified anchorages typically consist of unquestionably strong elements of a structure.

Program Administrator — A person authorized by their employer to be responsible for managing the employer's fall protection program.

Qualified Person — A person with a recognized degree or professional certificate and with extensive knowledge, training, and experience in the fall protection and rescue field who is capable of designing, analyzing, evaluating and specifying fall protection and rescue systems to the extent required by these standards.

Rescue — The process of removing a person from danger, harm, or confinement to a safe location.

Self-Retracting Device (SRD) — A device that contains a drum wound line that automatically locks at the onset of a fall to arrest the user, but that automatically pays out from and retracts onto the drum during normal movement of the person to whom the line is attached. After onset of a fall, the device automatically locks the drum and arrests the fall. Self-retracting devices include self-retracting lanyards (SRLs) and self-retracting lanyards

with integral rescue capability (SRL- Rs).

Shall — The word “shall” is to be understood as denoting a mandatory requirement.

Should — The word “should” denotes a recommendation.

Swing fall — A pendulum-like motion that occurs during and/or after a vertical fall. A swing fall results when an authorized person begins a fall from a position that is located horizontally away from a fixed anchorage.

Total Fall Distance — The total vertical distance a person falls, measured from the onset of a fall to the point where the person comes to rest after the fall is stopped.

Webbing — A narrow-woven fabric with selvedge edges and continuous filament yarns made from light and heat resistant fibers.

4. Responsibilities

- Program Administrator

The program administrator shall be responsible for development, implementation, monitoring, and evaluation of the managed fall protection program. These responsibilities shall include, but are not limited to, identification of new fall hazards, creating new and auditing existing procedures to protect workers from fall hazards, scheduling and overseeing inspections and training as appropriate, and ensuring the program meets current and local codes and regulations pertaining to fall protection.

- Competent Persons

The competent person shall be responsible for the immediate supervision, implementation, and monitoring of the managed fall protection program. These responsibilities include overseeing the safe use of the fall protection equipment in accordance with this program and current and local codes and regulations. They shall setup and supervise improvised anchorages, carry out scheduled inspections as needed, evaluate authorized users, and carry out rescue procedures as laid out in this program.

- Authorized Persons

Authorized Persons shall be responsible for the proper use, inspection, maintenance and care of fall protection equipment in accordance with this program and their training. Authorized persons shall notify the competent person of any fall protection equipment defects or damage. They may connect and disconnect to and from anchorages as laid out by this program or as directed by a competent person, but may not setup or choose the anchorage themselves.

5. Program Components

The following systems are covered by the University’s program for working at heights:

- Ladders - Fixed, portable, temporary, or roll away type
- Mobile elevating work platforms (MEWPs) – bucket trucks, scissor lifts, man-lifts, forklift-mounted platforms, cherry pickers, etc.
- Scaffolds – Suspended, fixed, or portable scaffolding
- Slips, Trips, and Falls – Awareness of conditions to minimize slips, trips, and falls on walking/working surfaces

Elements of this program include:

i. **FALL PREVENTION**

Wherever practical, a safe working area must be provided by means of work platforms or scaffolds. Such work areas should be designed and configured to prevent falls.

Fall prevention equipment may consist of the following:

- Covers - Covers are fastened over holes in the working surface to prevent falls.
- Guardrails - Standard guardrails consist of a top rail, located 38-42 inches above the floor and a mid-rail installed along drops of more than 30 inches. Work platforms and scaffolds must have complete floors and guardrails with safe access and egress provided. Toe boards may also be required if there are persons working or passing under the work platform. Guardrails must be rated to withstand 200 pounds of force applied in any outward or downward direction.

ii. **PERSONAL FALL RESTRAINT**

A personal fall restraint system prevents a worker from being exposed to any fall. Personal fall restraint systems may use body belts or harnesses with anchor points capable of supporting four times the intended load. Personal fall restraint protection systems are rigged to allow the movement of employees only as far as the sides of the working level or working area. When a restraint system is used for fall protection from an aerial lift or a boom-type elevating work platform, the lanyard and anchorage must be configured so that the employee is prevented from falling any distance.

iii. **POSITIONING DEVICE**

Positioning device systems consist of a full-body harness rigged to allow work on a vertical surface, such as a wall, with both hands free. Positioning devices shall be:

- Rigged such that an employee cannot free fall more than 2 feet.
- Inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service.
- Have anchorage connectors capable of supporting two times the intended load or 3,000 pounds, whichever is greater.

iv. **PERSONAL FALL ARREST SYSTEM**

In other situations, fall protection in the form of personal fall arrest systems must be used. This includes situations in which work is being carried out from a mobile elevating work platform, aerial bucket truck, or boom lift. Fall arrest equipment must be rated at 5000 pounds to support the falling person, stop them from free falling more than 6 feet, limit the arresting force on the body to 1800 pounds, and bring them to a stop with a maximum deceleration distance of 3.5 feet.

Components of a personal fall arrest system include a full-body harness, lanyard, deceleration device, self-locking snap hooks, and an anchorage capable of supporting at least 5000 pounds. There must be a system for ensuring that Fall Protection equipment is:

- Tested and certified for use.
- Inspected by the user before use; and
- Destroyed following a fall or where inspection has shown evidence of excessive wear or mechanical malfunction.

v. **USE OF PERSONAL FALL ARREST SYSTEMS**

Employees who use personal fall arrest systems to control fall hazards in their work area shall be knowledgeable of the following:

- The application limits of the equipment

The proper hook-up, anchoring and tie-off techniques including determination of elongation and deceleration distance; and methods of use, inspection, and storage of equipment.

- **Pre-Use Inspections**
Personal fall arrest components including harnesses and lanyards shall be inspected prior to each use for mildew, wear, damage, or other deterioration. Defective components shall be removed from service.
- **Semi-Annual Inspections**
A competent person shall inspect fall arrest systems including harnesses and lanyards at least semi-annually or according to manufacturer recommendations. The date of the most recent semi-annual inspection shall be recorded on the manufacturer's inspection tag that is permanently attached to the harness or lanyard. In addition, records shall be kept and maintained for the life of the equipment showing date of purchase, dates when attachments were renewed, and dates when the equipment was inspected and by whom.
- **Anchorage**
Anchorage connectors must, where practical, be above the head of the worker and must ensure that in the event of a fall, the worker will neither swing nor touch the ground. Anchorage connectors used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as follows:
 - As part of a complete personal fall arrest system which maintains a safety factor of at least two; and
 - Under the supervision of a qualified person.

vi. **INSPECTION OF ROOF TOP INSTALLATIONS**

Cal/OSHA requires that all building owners of roof top exterior building maintenance installations have the components inspected at least every 12 months and maintained to ensure a safe environment for all workers performing tasks at height.

Roof anchorage certification:

A 12-month inspection which includes a visual inspection of the building's engineered and permanently installed equipment. The 12-month inspection may be done by any "competent person" as defined by Cal/OSHA.

If there is no documentation that these inspections have been done within 12 months of the initial roof certification or of a previous 12-month inspection, a re-certification inspection conducted by an experienced inspection company, usually a structural engineering firm, may be required.

The roof certification evaluation process requires an on-site visit and inspection of all existing anchorage support systems including but not limited to:

- Proper location of lifeline and safety line anchorage
- Condition of protective coating on the assemblies and degree of any ferrous metal corrosion
- Engineered drawings including proper anchorage design, strength capacity, and structural safety

6. Reporting Requirements

Constant awareness of and respect for working at heights procedures and compliance with all applicable UCI safety rules is mandatory.

Supervisors may issue warnings and implement disciplinary actions in accordance with University Policy for failure to follow the guidelines of this program. Employees shall report any safety concerns to their supervisor or EH&S.

7. References

Title 8 California Code of Regulations, General Industry Safety Orders - §3209,
§ 3210, §3211, §3212, §3213, §3214, §3299

American National Standards Institute (ANSI), Safety Requirements for Personal Fall
Arrest Systems, Subsystems and Components (ANSI Z359.1-1992 (R1999))