

FALL PROTECTION PROGRAM

OCT 2021



USC University of
Southern California

Office of
Environmental
Health and Safety

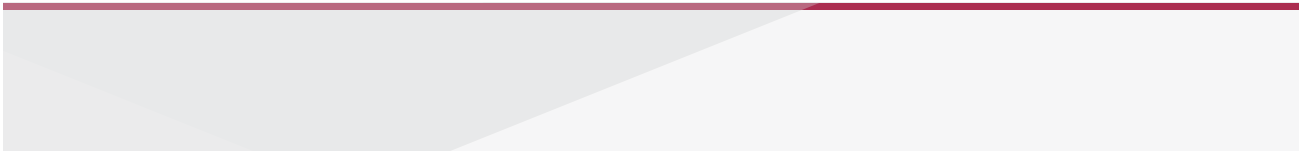


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1.0 Purpose and Scope

The University of Southern California's Fall Protection Program is to establish a written structure for staff, faculty, students, and visitors to follow when working in elevated areas and where the potential for fall exists as required by Title 8 of the California Code of Regulations (T8CCR). It is designed to educate USC employees, students, and volunteers about the inherent hazards of working on elevated surfaces and to offer guidance in the form of safety protocols, best practices, and safety training.

Additionally, the Fall Protection Program:

- Enables USC departments to comply with local, state, and federal regulations.
- Guides employees, students, and volunteers on assessing work areas to determine the type of fall protection, training, and procedures required before initiating any job task.
- Provides oversight for the safe operation of USC academic and work locations.
- Is made available to all employees, students, and volunteers.

Fall protection is required whenever employees are working at heights equal to or greater than four (4) feet high on USC's premises including subterranean spaces per California General Industry Standards (Title 8 CCR 3210 (b)). **Fall protection can be in the form of perimeter protection (e.g., guardrails - see below and toe boards), personal protective equipment (e.g., safety harnesses), and safety monitoring systems.**

For perimeter protection, *"all open sides of unenclosed elevated work locations, such as: roof openings, open and glazed sides of landings, balconies or porches, platforms, runways, ramps, or working levels more than 30 inches above the floor, ground, or other working areas of a building"* guardrails need to be provided per Title 8 CCR 3210 (a).

The Fall Protection Program applies to the following areas:

- | | | |
|--|-----------------------------------|---|
| • Aerial Lifts | • Fixed/Portable Ladders | • Scaffolds |
| • Roof Access or Skylights | • Stairways | • Trenching/Excavation |
| • Structural Framing | • Tops of Equipment | • Window Washing |
| • Manholes | • Loading Docks | • Tree Trimming |
| • High/Low Voltage electrical work 4 ft. above surface | • Water sumps, tanks, and vessels | • Wall openings (>18 inches) or open sided floors |

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2.0 Regulations and Policies



State

Cal/OSHA

Subchapter 4. Construction Safety Orders

Article 24. Fall Protection

§1670. Personal Fall Arrest Systems, Personal Fall Restraint Systems and Positioning Devices.

Subchapter 7. General Industry Safety Orders.

Group 1. General Physical Conditions and Structures.

Article 2. Standard Specification. Title 8. CCR 3209-3239

Article 4. Access, work space and work areas. Title 8, 3276 and 3277



ANSI

ANSI Standard Z359 where mandated by OSHA



USC Policies and Standards

The following USC policies and standards have been established to create a safe and productive working and learning environment and ensure compliance with all regulatory requirements:

- Injury and Illness Prevention <https://policy.usc.edu/injury-prevention/>
- Training Requirements and Opportunities
<https://policy.usc.edu/training-requirements-and-opportunities/>
- Smoke Free <https://policy.usc.edu/smoke-free/>
- USC Drug-Free <https://policy.usc.edu/drug-free/>
- Personal Protective Equipment Standard
<https://ehs.usc.edu/research/manage/ppe/>

If you are a faculty member, student or staff employee working on an elevated platform or in or around a subterranean area, it is your responsibility to familiarize yourself with these policies and adhere to them at all times. Questions or concerns about individual policies should be directed to the "Responsible Office" listed at the end of each policy.

NOTE: USC reserves the right to revise any Environmental Health and Safety Department policy at any time.



3.0 Definitions

Term	Definition
Access	A means of reaching a work space or a work area.
Accessible	Within reach from a work space or work area.
Accessible Location	A location which can be reached by an employee standing on the floor, platform, runway, or other permanent working area.
Adequate	Sufficient to reduce the risk to an acceptable minimum
Aided Rescue	A worker who is suspended from a lifeline and cannot perform a self-rescue will need help from trained rescuers using appropriate equipment, including appropriate fall protection. Off-site emergency response personnel may rescue suspended workers.
Anchorage	A secure point for lifelines, lanyards, or deceleration devices.
Approved	Tested and approved by a Nationally Recognized Testing Laboratory (NRTL) such as Underwriters Laboratory (UL) or Gravitac.
Attic Story	Any story immediately below the roof and wholly or partly within the roof framing, designed, arranged, or built for business or storage use.
Basement	That portion of a building between floor and ceiling, which is partly below and partly above grade but so located that the vertical distance from grade to the floor below is less than the vertical distance from grade to ceiling. (See "Story")
Body Belt	A strap that is secured around the waist and is used for positioning or restraint only. Body belts are not used for fall arrest. Also known as safety belts.
Body Harness	Also referred to as Full-body harness. An interconnected set of straps that may be secured about a person in a manner that distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of a personal fall arrest system.
Buckle	An integral connector used to attach straps or webbing segments together or to themselves.
Buddy System	A system of organizing employees into work groups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

Term	Definition
Building	Any structure as to which state agencies have regulatory power, built for support, shelter, housing or enclosure of persons, animals, chattels, equipment, or property of any kind, and also includes structures wherein things may be grown, made, produced, kept, handled, stored, or disposed of. All appendages, accessories, apparatus, appliances, and equipment installed as a part of a building or structure shall be deemed to be a part thereof, but "building" shall not include machinery, equipment, or appliances installed for manufacture or process purposes only, nor shall it include any construction installations which are not a part of a building, any tunnel, mine shaft, highway, or bridge, or include any house trailer or vehicle which conforms to the Vehicle Code.
Competent Person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. For the purpose of erecting and dismantling scaffolds or falsework, a person that possesses <i>"certification of competence in scaffold erection, dismantling and use issued by trade associations, State-approved apprenticeship or training programs or other similar training programs"</i> is considered a "qualified" or Competent Person per 8 CCR, §1637 (k).
Fixed Ladder	A ladder (including an individual rung ladder) that is permanently attached to a structure, building or equipment.
Floor Opening	An opening in any floor or platform, twelve (12) inches or more in the least horizontal dimension. It includes stairway floor openings, ladder way floor openings, hatchways, and chute floor openings.
Freefall	The act of falling before a personal fall arrest system begins to apply force to arrest the fall.
Freefall Distance	The vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.
Frequent	More than twelve times each year unless specifically stated otherwise in individual orders.
Guardrails	A vertical barrier erected along the open edges of a floor opening, wall opening, ramp, platform, runway, or other elevated area to prevent falls of persons.
Handrail	A device to be used as a handhold.
Inaccessible Location	A location to which access is provided only by portable ladders or other portable temporary means.
Landing	An extended step or platform breaking a continuous run of steps or ramps.

Term	Definition
Lanyard	A flexible line of rope or strap that generally has a connector at each end for connecting the body harness to a deceleration device, lifeline or anchor point.
Lifeline	A line provided for direct or indirect attachment to a body belt, body harness, lanyard, or deceleration device. Such lifelines may be horizontal or vertical in application.
Loading Ramp	A readily moveable or portable surface of fixed or adjustable slope designed to facilitate transfer of cargo or materials handling equipment to bridge the space between a vehicle and a receiving level or area.
Non-Entry Rescue	The ability to utilize retrieval systems or methods whenever an authorized entrant enters a permit space.
Personal Fall Arrest System	A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, and body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
Platform	An elevated working level for persons. Storage platforms, balconies and open-sided floors are considered platforms for the purpose of these orders.
Qualified Person	A person designated by the employer who by reason of his training and experience has demonstrated his ability to safely perform his duties and, and where required, is properly licensed in accordance with federal, state, or local laws and regulations.
Retrieval System	Is designed to raise and/or lower workers into and out of confined spaces. The worker should be attached to a retrieval system prior to entering a confined space. If an accident occurs, the worker may be pulled to safety by his retrieval system.
Rope	Refers to steel-wire rope unless otherwise specified.
Rope Grab	A deceleration device that travels on a lifeline and automatically engages the lifeline and locks so as to arrest a fall.
Runway	An elevated passageway. Runways are sometimes referred to as catwalks, foot walks, elevated walkways, oilers' platforms or maintenance runways.
Self-Rescue	Fallen worker can take steps to minimize suspension trauma. Self-rescue methods allow a fallen worker to temporarily relieve pressure on the legs or in some cases to even lower himself or herself to the lower level.
Self-Retracting Lifeline/Lanyard	A deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal movement and which, after onset of a fall, automatically locks the drum and arrests the fall (usually within two feet or less).

Term	Definition
Snap Hook	A connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object; also known as Carabineer.
Stair Railing	A vertical barrier constructed along the open side or sides of stairways and as intermediate stair rails where required on wide stairways.
Stairway	Two or more risers shall constitute a stairway.
Step Ladder	A step ladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.
Story	That portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a basement, cellar or unused underfloor space is more than 6 feet above grade as defined herein for more than 50 percent of the total perimeter or is more than 12 feet above grade as defined herein at any point, such basement, cellar or unused underfloor space shall be considered as a story.
Wall Opening	An opening in a wall or partition not provided with glazed sash, having a height of at least 30 inches and a width of at least 18 inches, through which a person might fall to a level 30 inches or more below.



4.0 Roles and Responsibilities

Clearly defined roles and responsibilities serve to help an individual more fully understand their own role and responsibilities as well as that of others in the management structure. Having clearly defined roles minimizes confusion by making expectations known ahead of any problems that might arise. While the expectations are understandably different for every party involved, one that is shared by all is to always ***Make Safety Your 1st Operational Thought!***

Managers/Supervisors

Managers/Supervisors will:

- Establish Standard Operating Procedures for working in different elevated area processes.
- Be familiar and understand employee's scope of work and associated hazards in order to provide training.
- Have a written rescue plan for different processes.
- Document and maintain training records.
- Verify employees complete [Job Hazard Analysis](#) prior to the job task.
- Perform routine checks on work operations.
- Enforce the USC policies and procedures.
- Correct any unsafe practices that may arise.
- Verify required manufacturer inspections of fall protection equipment are completed and documented.
- Must receive proper training in assessing workplace locations to determine whether it is in need of fall protection. Contact injuryprevention@usc.edu or (323) 442-2200 for guidance.
- Verify that employees receive proper fall protection.

Employees, Students, or Volunteers

Employees, Students, or Volunteers will:

- Be trained before using fall protection equipment
- Familiarize themselves with manufacturer's instructions, specifications, components, and limitations of safety harnesses and other personal protective equipment.
- Inspect applicable fall protection prior to each use.
- Store personal fall protection equipment in a proper storage place away from damaging sources (e.g., sun, flammables, and corrosives) and avoid creating trip hazards when storing equipment.
- Complete Job Safety Analysis prior to the job task.
- Maintain good housekeeping.
- Report conditions that may lead to fall hazards to supervisors.
- Report defective equipment.
- Utilize tools or equipment to minimize the risk of fall hazards while opening areas below surface.

Engineering, Construction Departments, and Project Managers

Engineering, Construction Departments, and Project Managers will:

- Make every effort to implement a design that eliminates fall hazards where feasible or reduces the inherent risk by utilizing the hierarchy of controls.
- Verify all new equipment, construction, and renovation projects are planned, designed and constructed in a manner that fall protection is included in all areas and/or equipment that are under the scope of this policy.
- Verify all designs and installations meet the fall protection requirements of all applicable federal, state, and local regulations, and consensus standards (e.g., ANSI, etc.).
- Consult with EH&S for guidance.

Contractors

It is the responsibility of contractors working at USC to comply with all applicable workplace safety regulations and to verify their employees perform good fall protection practices. Additionally, contractors will:

- Verify that all their employees and subcontractors receive proper training; provide documentation of fall protection training to include but not be limited to the limitations of applicable fall protection systems/equipment.
- Provide fall protection equipment for their employees and subcontractors (if subcontractors do not have their own fall protection equipment).
- Verify equipment is able to meet ANSI and Cal/OSHA standard requirements for live loads on anchorage and guardrails.
- Establish and maintain appropriate communication with affected employees and visitors.

Office of Environmental Health & Safety

The objective of the Office of Environmental Health and Safety (EH&S) is to provide a safe and health work environment that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing, the best experience of operations similar to USC. EH&S' goal is zero accidents and injuries.

EH&S will:

- Assist in identifying potential fall hazards from elevated work areas to subterranean work environments.
- Provide guidance in selecting applicable fall protection equipment, specifications, requirements and inspections.
- Help supervisors/managers create Standard Operating Procedures for each work process.
- Assist engineers with fall protection systems prior to new construction.
- Provide additional training on fall protection.
- Review and revise the Fall Protection Program as needed.

- Provide guidelines, administrative consultation, and reviews of fall protection systems.
- Participate in investigations of all incidents involving falls from elevated areas or into subterranean areas.

Before the introduction of fall protection systems, fall hazard assessments, training, and good housekeeping measures should be performed to eliminate any slip, trip or fall hazards that can exacerbate the free-fall and ultimately causing injury. Simple acts like cleaning the work area eliminates loose clutter that can create trip hazards but also prevents falling hazards to individuals below the work area. Elimination of the hazard is always top priority and the goal USC strives for.

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5.0 Fall Protection Systems

USC's safe work practices follow the Hierarchy of Controls to eliminate or reduce fall hazards by implementing the following methods of mitigation in this order, where feasible.

- Hazard Elimination - Perform work without entering an elevated workplace.
- Passive Protection - Physical barriers around unprotected edges (e.g., guardrails).
- Fall Restraint Systems/Personal Protective Equipment (e.g., safety harness, lowering equipment) prevents employee's movement close to unprotected edges.
- Fall Arrest Systems/Personal Protective Equipment (e.g., lowering equipment) to arrest falls within acceptable force and clearance margins.
- Administrative Controls
 - Conduct fall hazard assessments before any work is performed.
 - Verify employees are fully trained on standard operating procedures and use of fall protection equipment.
 - Restrict or isolate the work area with barriers and/or caution tape. Alert employees with postings or signage.
 - Inspect work area to eliminate any slip, trip, or fall hazard that can predispose the worker to a free-fall and ultimately cause injury.
 - Maintain good housekeeping of the work area (e.g., eliminate clutter and remove loose tools/objects from elevated surfaces).

Before procuring any type of equipment for a fall protection system, various factors must be taken into consideration. Factors may include systems limitations set forth by the manufacturer such as weight limit and material strength, proper positioning, training, and signage.

The Office of Environmental Health and Safety can assist in determining the appropriate safety system for fall protection that also meets regulatory compliance.

All fall protection systems that are used at USC shall meet compliance standards set forth by Cal/OSHA and ANSI Z359. No fall protection device may be modified outside of the manufacturer's specifications.



Protecting Open Sides:

- Every floor and roof opening shall be guarded with a cover, a guardrail or equivalent on all open sides.
- All guardrails must be 42 inches in height (+/- 3 inches) and must have a mid-rail half way and toe boards to prevent falling object hazards, where applicable.
- Openings through railings shall have either a swinging gate or equivalent protection or the passageway through the opening shall be offset so that a person cannot walk directly into the opening. Gate shall be capable to withstand at least 200 lbs applied vertically downward to the uppermost surface.
- When covers of manholes or vaults are removed, the opening shall be promptly guarded by a railing, temporary cover, or other suitable temporary barrier which is appropriate to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.
- Every permanent pit, sump or other sunken location 30 inches or more in depth, or from which, machinery, equipment, or materials are customarily operated or frequently repaired, serviced, adjusted or otherwise handled shall be provided with a safe means of access. Such means of access shall be provided by means by either a portable, fixed or permanent stairways.
- Every open bin, bunker or hopper whose upper edge is less than 36 inches above floor or working level shall be equipped with a standard railing around its edges or a grating or a grille shall cover the top.
- Loading docks are to be protected when not in use with a visual barrier to alert employees of fall hazard (e.g., yellow chains across the loading dock edge).

Employers must verify that employees who may be exposed to fall hazards are trained to recognize and avoid the associated hazards while working on loading docks

- Employees shall be protected when working within six feet of skylights or skylight openings campus wide. Methods include but are not limited to installing screens above skylights with the required design, construction, and installation that meets Cal/OSHA standard of greater than 400 lbs. or twice the weight of the employee. Refer to T8 CCR § 3212.





6.0 Personal Protective Equipment

Personal protective equipment (PPE) when used properly minimizes one's exposure to hazards in the workplace. PPE must be used where other types of exposure controls (e.g., engineering and administrative controls) are not feasible or to augment controls to minimize exposures. **PPE should be viewed as the control of last resort and should be worn only after every reasonable effort to mitigate a hazard has been considered.**

All protective measures (including PPE) that are required or recommended by a product manufacturer (e.g., equipment, machines, tools, or hazardous materials) must be followed, donned, and/or in place before using the product.

CCR T8 §3380 of the California Code of Regulations requires every California employer to assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE) and if such hazards are present, or likely to be present, the employer will:

- Select and have each affected employee use the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment.
- Communicate selection decisions to each affected employee and select PPE that properly fits each affected employee.
- Assure that the employee is instructed and uses protective equipment that is consistent with the manufacturer's requirements.
- Verify that all required safety devices and safeguards, whether employer or employee provided, including personal protective equipment for the eyes, face, head, hand, foot, and extremities (limbs), protective clothing, respiratory protection, protective shields and barriers, comply with the applicable Title 8 standards and are maintained in a safe, sanitary condition.
- Verify that the required workplace hazard assessment was performed through a written certification (Fall Protection Hazard Assessment form. Contact EH&S at (323) 442-2200 or injuryprevention@usc.edu for evaluation) that identifies: (a) the workplace evaluated, (b) person certifying that the evaluation was performed, and (c) date(s) of the hazard assessment.
- Provide training to each employee who is required by this section to use PPE. Each employee will be trained to know at least the following:
 - When PPE is necessary
 - What PPE is necessary
 - How to properly don, doff, adjust, and wear PPE
 - The limitations of the PPE
 - The proper care, maintenance, useful life and disposal of the PPE.

- Verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification when applicable.

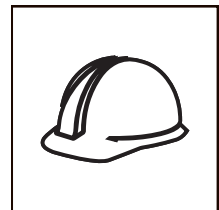
Additionally:

- PPE will be of such design, fit and durability as to provide adequate protection against the hazards for which they are designed. They will be reasonably comfortable and will not unduly encumber the employee's movements necessary to perform his or her work.
- Defective or damaged personal protective equipment will not be used.
- Each affected employee will demonstrate an understanding of the training specified in subsection 8 CCR 3380 (f)(4), and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.
- When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by subsection 8 CCR 3380 (f)(5), the employer will retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:
 - In the workplace render previous training obsolete; or
 - Changes in the types of PPE to be used render previous training obsolete; or
 - Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

Types of PPE

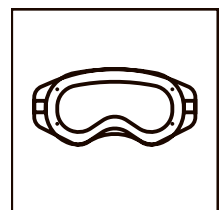
Head Protection

Hard hats and headgear are required for tasks that can cause any force or object falling to the head. A Class G Hard Hat is the minimum head protection required and can be worn once verified to be within 5 years of the manufacturer's date of issue. When performing head protection safety checks, verify that there are no dents or deformities on the shell and connections are tightened inside. Always replace a hard hat if it was used for any kind of impact, even if damage is unnoticeable. Do not store in direct sunlight.



Face and Eye Protection

Safety glasses/goggles/face shields are worn for tasks that can cause loss of vision, burns, splashes, sprays of toxic liquids etc. Darker lenses are used to protect from UV rays radiating from the sun and minimize glare that can lead to loss of vision. Verify that face protection is ANSI-approved. When conducting equipment safety checks, verify that there are no cracks or deformities on the lenses, verify the strap is in good working order and is firmly sealed to the cheek and forehead.



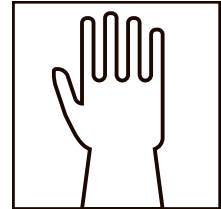
Foot Protection

Knee pads and safety boots protect against serious foot and leg injuries from falling or rolling objects, hot substances, electrical hazards, and slippery surfaces. Use boots with slip-resistant soles for adequate traction on working surfaces. Verify that foot protection is ASTM-approved.



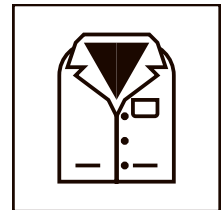
Hand Protection

Safety gloves are worn for tasks that can cause hand and skin burns, absorption of harmful substances, cuts, fractures or amputations. When inspecting hand protection equipment, verify that they fit perfectly with no spaces and are free from cuts, burns and chemical residue. Always replace them if any sign of contamination was observed.



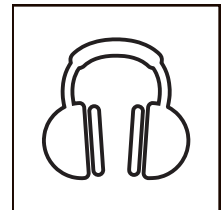
Body Protection

Safety vests and suits are worn for tasks that can cause body injuries from extreme temperatures, flames and sparks, toxic chemicals, insect bites and radiation. Verify that they are clean and free from cuts and burns. Always get a good fit to verify full body protection.



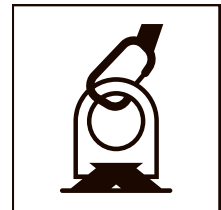
Hearing Protection

Ear muffs and plugs are used for tasks that can cause hearing problems and loss of hearing. When ensuring hearing safety, the equipment must fit the ear canal perfectly. Recommended types include formable earplugs to fit on different sizes of ear canals.



Fall Protection

Safety harnesses and lanyards are used strictly for tasks that can cause falling from heights and serious injury or death. Only USC-approved personal protection equipment that meets or exceeds ANSI standards shall be worn. Fall protection equipment and assemblies will be inspected annually by a competent person according to the manufacturer's recommendations.



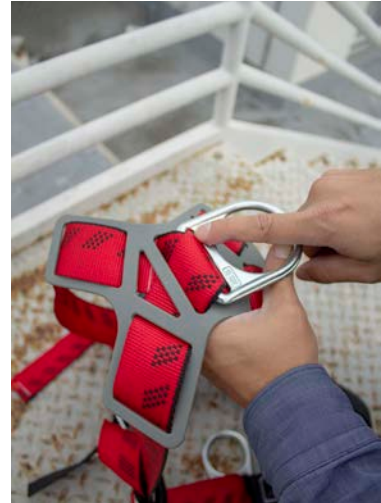
Additionally, all employees utilizing fall protection devices will inspect their equipment for any defects or malfunctions and verify that straps are free from tears, deformities, and burn marks, and that buckles are connected securely and tightly. This will be performed prior to each use.

NOTE: It is very important to:

- Report all defects immediately to your supervisor for replacement.



- Take defective equipment out of service and/or equipment that was subject to an impact load or beyond the manufacturer's recommended life expectancy (typically 5 years from the initial use date).
- Destroy safety harnesses or lanyards that have been subjected to an impact load. NOTE: DO NOT perform load testing on fall protection equipment.
- Body belts are NOT to be worn by USC employees or contractors. NOTE: As allowed by Cal-OSHA, USC opts to implement stricter policy to avoid employee's body position to free fall and hover with both upper and lower body below the safety belt. It reduces the potential for self-rescue and allows increased blood flow to the upper body.



Lanyards

- Protect lanyards (lifelines) from being cut or abraded.
- Inspect lanyards with body harness prior to each use by the employee using the equipment.
- Lanyards and vertical lifelines will have a minimum breaking strength of 5,000 pounds. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses will be made from synthetic fibers except when they are used in conjunction with hot work where the lanyard may be exposed to damage from heat or flame.

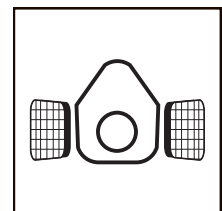
Anchorage Points

Approved anchorage points shall be:

- Established and marked in areas where lifelines and lanyards are used regularly.
- Capable of supporting 5,000 pounds per person. They shall be approved by a qualified or competent person.
- Easily accessible to avoid overreaching or exerting the body that creates the potential for fall hazards.
- Able to withstand four (4) times its intended load for a fall restraint system.

Respiratory Protection

Respirators are used when engineering controls are not available to protect against inhalation hazards. To wear a respirator an employee must be enrolled in the Respiratory Protection Program and have obtained medical clearance to wear one. Contact injuryprevention@usc.edu or (323) 442-2200 for more information.



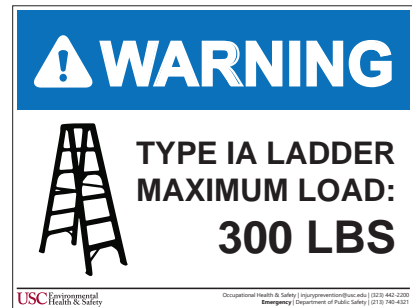


7.0 Ladders, Stairways, Elevated Platforms, and Scaffolds

Ladder Safety

Ladders must meet Cal/OSHA requirements for [Fixed Ladders \(CCR Title 8 §3277\)](#) and [Portable Ladders \(CCR Title 8 §3276\)](#). For guidelines on how to properly select and use a ladder per Cal/OSHA, follow guidelines below.

- Ladder selection must be determined on the work process that is going to be performed. Portable ladders must have a duty rating label to notify user of its limitations. All ladders must be inspected before each use and follow the ladder safety work practices for ascending and descending.
- Keep ladders clean and free from oil, grease, or slippery material.
- If ladders are found to be defected, they must be removed from service and destroyed.
- Metal rungs including individual rungs will have protection from deterioration by being painted or otherwise treated to resist corrosion or rusting from location demands. Repair or replace rungs/ladder immediately if corrosion is discovered.
- See [Ladder Basics Fact Sheet](#) for more information.



Stairways

Stairways shall have handrails or stair railings on each side, stairways less than 44 inches in width may have one handrail or stair railing. Stairways having less than four risers need not have handrails. Stairways shall be kept free of obstructions.

Aerial Devices/Elevated Working Platforms

Aerial lifts and elevating working platforms each have distinct requirements, standard operating procedures (SOPs), and Personal Protective Equipment. When working with this equipment, it is important to:

- Assess weather conditions and surrounding environments before utilizing equipment.
- Be aware of your surroundings to avoid hazards such as power lines and other elevated hazards.
- Perform housekeeping to eliminate loose tools or clutters that may contribute to trip hazards.

In addition,

- Approved aerial lifts may be used for working at elevated heights, however, all operators must wear approved fall protection and be secured by a lanyard when working inside the basket. Any operator that performs duties on an aerial lift must receive proper training on equipment on usage, limitations, and safety hazards. Inspections must be performed prior to each use to check for any defects or malfunctions.

- Approved aerial lifts shall come equipped with an emergency lowering means compatible with the specific elevating assembly employed. The lift must have both upper and lower control devices and shall be plainly marked as to their function and guarded to prevent accidental operation.



Scaffolds

All scaffolds will be:

- Erected in accordance with the provisions of Article 21 of the Construction Safety Orders.
- Erected and dismantled by qualified personnel only. All exposed surfaces shall be free from sharp edges or other laceration hazards. Scaffolds shall not be subjected to loads greater than its maximum intended working load. A qualified person shall determine the maximum intended working loads for scaffolds that are neither manufactured nor engineered.

Other requirements:

- Scaffolding shall be inspected by a competent person after installation, before first use, prior to each work shift, and after any adverse weather condition (e.g., high winds) that can affect a scaffold's structural integrity.
- Anchorage and bracing shall be such that scaffolds and falsework will be prevented from swaying, tipping, or collapsing.
- All scaffold planks shall be visually inspected for defects before use each day.
- Preventive maintenance shall be performed on all fall protection from equipment to personal protective equipment to reduce risk of malfunction during use.
- All fall protection equipment shall be visually inspected for defects prior to each use. If there is evidence of excessive equipment wear or deterioration or if mechanical malfunction is detected, the item shall be removed from service.

If one of these systems is not available or is infeasible during leading edge work, a specialized fall protection plan must be developed and implemented to protect workers from fall hazards. For all systems,

- Secure untethered objects/tools that have the potential to fall during work on elevated areas.
- Assess methods of transporting tools to and from elevated areas to minimize risk before work begins. Methods include utilizing canvas bags and tool belts.
- If work is performed underneath a working platform, a Job Safety Analysis must be completed to assess the measures taken to perform the work in a safe manner and ensuring best safe work practices and protective equipment are utilized. The assessment will address restricting area, personnel required, PPE, and signage.
- Elevated work areas also include working on top of equipment while servicing or maintaining. Keeping tools and equipment accountable will sharply reduce the potential of falling objects and reduces trip hazards.
- Signs consistent with 8 CCR, Section 3340 shall be posted at the perimeter of the affected work area to warn employees of the hazard.



8.0 Emergency Procedures

The employer shall provide prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves. A rescue plan must be in place in the event a person who has fallen may not be able to self-rescue after a fall. A rescue plan must be in writing and include, but not limited to, the following:

- A second person (attendant) must accompany the person using fall protection equipment and be always in direct communication with that person.
- The attendant must:
 - Be trained on emergency response and have a current first aid certificate.
 - Have immediate access to emergency services by calling DPS at 213-740-4321.
 - Have some means of immediate rescue if the person who has fallen is not able self- rescue or assist in the rescue.

The Department of Public Safety (DPS) should be the first contact in an emergency situation. DPS is the contact between USC and emergency services (fire, ambulance, etc.). DPS may be contacted at (213) 740-4321, 24/7.

NOTE: Work sites outside the DPS response area need to contact the local emergency service provider.

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9.0 Preventive Maintenance

Safe work practices will be performed periodically to reduce the accumulation of clutter, slippery surfaces, and defects on existing fall protection. Fall protection equipment and assemblies will be inspected annually by a competent person according to the manufacturer's recommendations.

- Housekeeping is performed routinely to reduce the clutter, accumulation of standing water or other slippery surfaces that can cause injury. Once a slip, trip, or fall hazard has been recognized by housekeeping efforts, corrective action must be taken immediately.
- Routine audits on current fall protection will reduce the risk of malfunctions during use. Auditing current elevated areas will also alert personnel on the lack of housekeeping, changes in the environment, or work processes. If missing or bent rails, defective anchors, or defects of aerial lift are found during an inspection, the employee will report it immediately to the supervisor to initiate corrective action.
- Personal fall protective equipment will be inspected before every use.
 - Refer to the [checklist](#) for guidance on how to perform an inspection.
 - If there are any defects found on the safety device or a safety harness was used in an incident involving a fall, the fall protection device must be taken out of commission and discarded immediately.
- Elevating platforms such as aerial lifts and forklifts need to be checked for any defects such as leaks, malfunctioning operating controls, or malfunctioning safety devices.
 - Use the inspection checklist for guidance.
 - Inspections must be completed and documented before each use. Notify the supervisor if there are any deficiencies with equipment.

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10.0 Communication

Communicating potential fall hazards to employees, staff, faculty, students, and contractors is accomplished via employee training, tailgate meetings, bulletins, Fact Sheets, documentation (JSA), SOPs, or verbally and occurs prior to the onset of work. Everyone shares the responsibility to provide information to any updates or changes to procedure or fall protection equipment.

Issues and concerns can be:

- Discussed at any time with the immediate supervisor to initiate any corrective action(s).
- Forwarded to EH&S at injuryprevention@usc.edu.

A Job Safety Analysis (JSA) form is completed to assess hazards on the work site prior to commencing a task. It identifies potential hazards that employees may encounter while performing their work. Employees will review the JSA prior to work. The JSA:

- Identifies primary and secondary hazards.
- Prioritizes jobs by risk assessment.
- Articulates solutions to correct or prevent hazards.
- Details employees' roles and participation.
- Implements control methods.
- Determines appropriate Personal Protective Equipment.
- Provides a step-by-step safety plan.

The JSA is discontinued and closed when the work task is completed.

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11.0 Training

USC personnel that work on elevated work surfaces four (4) feet and higher must receive training periodically to maintain proficiency. Training will be consistent with the scope of the employee's work and rescue plan. Employees are not authorized to exceed their scope of training.

Training on fall protection equipment may be a full scale classroom setting or a shorter, tailgate meeting. The training will include the following elements:

- Instruction on use of the equipment
- Discussion on its capabilities and limitations
- A "hands-on" demonstration to gauge the employee's understanding of the material. The "hands-on" demonstration may focus on erecting and dismantling fall protection systems such as tripod kit, temporary guardrails, and other barriers.

Employees who operate aerial lifts will receive additional training by a competent person. The training will include operating procedures, safety devices, and inspections followed by a hands-on practical in the field.

Primary and/or supplemental training can be conducted by:

- An in-house trainer that is considered a competent person with education and experience on fall protection
- Environmental Health and Safety
- Third party companies with expertise on the subject matter

The training program will address topics such as but not limited to:

- Recognition of fall hazards
- When and where fall protection is necessary
- Methods or controls to protect employees from falling
- Appropriate use of personal fall arrest equipment
- Applicable fall protection and rescue plan
- How to utilize the fall protection and rescue procedures
- Equipment inspection procedures
- How to implement a rescue plan

All training must be documented and maintained for five (5) years.

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12.0 Recordkeeping

Cal/OSHA requires employers to keep records related to all aspects of safety in the workplace. Required records include documents about job safety analysis, inspections, incident investigations, and trainings. Cal/OSHA also requires employers to keep records on hazard evaluations and the corrective actions taken to reduce or control safety risks in the workplace.

Required Records

- Workplace and fall equipment safety inspections (include any findings, defects, and corrective actions taken)
- Workplace safety trainings to include PPE, task specific work practices, fall protection equipment, general safety, Hazard Communication, Injury and Illness Prevention, etc.
- Accident, incident and near miss investigations to include a root cause analysis
- Maintenance records (machines, fall protection equipment, facilities, etc.)
- Calibration records

All records will be kept for five (5) years. Recordkeeping will be managed by individual departments.



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