

CALIFORNIA STATE UNIVERSITY, DOMINGUEZ HILLS

Fall Protection Program

Enacted: December 19, 2023

Contents

Introduction 1
Purpose 1
Definitions 2
Responsibilities
Managers6
Supervisors/Leads6
Environmental Health & Safety6
University Employees
Types of Fall Protection Systems
Parapets/Railings
Fall Restraint System
Positioning System
Fall Arrest System
Other Fall Protection Systems
Typical Fall Protection Locations
Fall Protection Safety Plan
Rescue Plan
Contractors
Training11
Re-Training11
Appendix
Appendix A
Appendix B

Introduction

The purpose of the CSUDH California State University, Dominguez Hills (CSUDH) recognizes falls present significant workplace hazards. The risk of falls can be reduced or eliminated by careful planning, thorough training prior to performing work, using appropriate safety equipment, following safe work practices and Cal/OSHA regulations, and providing close supervision of employees exposed to falls.

Falls can happen in an instant, including the following free fall rates.

- 4ft ½ second
- 16dft 1 second
- 64 2 seconds

Per Cal/OSHA's fatal occupational injury statistics there we 78 fatalities in California related to falls in 2021. This program is meant to provide necessary information regarding safety measures and fall protection devices, equipment, and systems as required to meet the requirements of California Code of Regulations, Title 8, Cal/OSHA.

California Code of Regulations (CCR), Title 8, Subchapter 2 Sections 3209-3239

Purpose

A written Fall Protection Program establishes guidelines to be followed for employees working on our campus, in the field or on leased spaces.

This program outlines the requirements for assessment and mitigation of fall hazards. Depending on the nature and location of the work to be performed, a variety of safety measures may apply based upon the specific location. Using the hierarchy of controls, the primary purpose of this program is to eliminate fall hazards; if the fall hazards cannot be eliminated, then employees are required to use personal fall protection systems.

Additionally, this Fall Protection Program:

- Allows CSUDH employees to comply with local, state, and federal regulations.
- Guides employees to assess work areas to determine the type of fall protection, training, and procedures required before initiating any job task.
- Helps to identify locations where engineered systems currently DO NOT exist.
- Is made available to all employees.

Definitions

Access – A means of reaching a workspace of a work area.

Accessible – Within reach from a workspace 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 Gravitec.

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 located so 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.

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 "certification of competence in scaffold erection, dismantling and use issued by trade associations, State-approved apprenticeship or training programs or other similar training programs" is considered a "qualified" or Competent Person per 8 CCR, §1637 (k).

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.

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 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 a 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).

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 intermediate stair rails were 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.

Responsibilities

Managers

- Providing a workplace that eliminates or minimizes the potential for falls from any elevated work activities.
- Identifying employees who are affected by this program and ensuring they receive the required fall protection training.
- Identifying elevated work areas in cooperation with the Environmental Health and Safety (EHS).
- Stopping work when safety deficiencies are present, until such deficiencies are corrected.
- Designating a supervisor/lead who will be responsible for implementing a Fall Protection Safety Plan for every project that requires fall protection.

Supervisors/Leads

- Making sure all affected employees have received fall protection training prior to starting work on elevated surfaces or other locations where a fall hazard may exist.
- Ensuring employees utilize the proper fall protection.
- Identifying elevated work areas in cooperation with the EHS.
- Stopping work when safety deficiencies are present, until such deficiencies are corrected.

Environmental Health & Safety

- Working with Department Managers to ensure a Fall Protection Coordinator who will provide a program oversight has been assigned.
- Providing coordination for the required training such as awareness level and competent person training.
- Conducting periodic visits to elevated work areas for the purpose of observing work procedures.
- Evaluating elevated work locations as identified by managers and supervisors for fall protection requirements.
- Coordinating the acquisition of fall protection systems and Personal Protective Equipment (PPE).
- Periodically reviewing the Fall Protection Program for compliance with CAL/OSHA requirements.
- Recordkeeping.

University Employees

- Completing ALL required fall protection training before starting work at locations where fall protection would be warranted.
- Working in accordance with the Fall Protection Program requirements and **ALL** listed safety practices.
- Properly inspect all required fall protection and personal protective equipment before use.
- Use ALL fall protection equipment only for its intended use.
- **IMMEDIATELY** report any unsafe conditions or other safety issues to their manager.

Types of Fall Protection Systems

Fall protection systems in order of Hierarchy of Controls are as follows:

Parapets/Railings

Parapet, Railings or other elevated structure equaling 42" height above finished floor or more. These systems are designed to protect all workers in the area. Railings and parapets placed around maintenance equipment while working at heights is the preferred control measure to prevent falls. This can be on roof tops, mechanical screens or elevated work platforms such as loading docks.



Figure D-11 - Guard Rail Systems

Fall Restraint System

A restraint system is used to restrict the worker's movement to prevent reaching a location where a fall hazard exists. The restraint systems are not designed for fall arrest and, therefore, should be set back from edges where the worker can't extend past the edge where a fall could occur. Typically, a restraint system would not require a rescue plan. Items typically seen in a restraint system are as follows:

- Full Body Harness
- Restraining lanyard connected to the D ring of the harness
- Anchoring point
- Lifeline horizontal or vertical set back where the worker can't reach the edge



Positioning System

A positioning system is used to hold a worker in place while allowing a hands-free work environment at elevated heights. The positioning systems are not designed for fall arrest yet for the worker to be able to position themselves to safely perform work at heights. Items typically seen in a positioning system are as follows:

- Connecting anchor
- Full Body Harness
- D rings on both hips to connect a lanyard to and then to the connecting anchor



Fall Arrest System

A personal Fall Arrest System is used to slow and stop a person during a fall from an elevated location. **As a general rule**, it is recommended that a Fall Arrest System be used at working heights of four (4) feet or more; however, regulatory agencies vary the height-use requirements based on tasks or industries. Fall Arrest systems are the least effective from preventing falls and should be used with Caution. Contact EH&S prior to use to ensure adequate height, swing radius and rescue plans are in place. Items typically seen in a positioning system are as follows:

- Anchor Point, needs to be rated for 5,000 lb. or engineered at twice the intended load
- Lanyard (chock adsorbing to absorb the fall)
- Full body harness, preferably with leg straps to support lower body until rescue can occur



Other Fall Protection Systems

These systems include but are not limited to

- **Personal Safety Nets** engineered systems designed to catch ones fall up to 30'. Safety nets are typically used where holes, steel erection, leading edges or other construction related activities where other engineered systems are less feasible.
- Vertical and Horizontal Lifelines- These engineered systems are typically used as part of a restraint system to prevent the worker from going over a leading edge or roofline.
- Warning Lines These systems are designed to warn the workers of a leading edge or fall hazard. These systems are designed to hold 15 pounds of pressure, but likely will not stop a worker from passing through. Typically warning lines are used when no other feasible solution is available, and these should be one of the last resorts.
- Safety Monitor a person whose sole responsibility is to ensure other workers are not getting too close to leading edges or elevation changes. Safety monitors can also be used in conjunction with a warning line system.

Typical Fall Protection Locations

- Flat and low sloped roof locations when within 6 feet of the roof edge or during roof repairs or maintenance (4:12 pitch or less), where parapets or railing do not equal at least 42" in height and for railings must contain a midrail on center.
- Exterior and interior equipment platforms, catwalks, antennas/towers, etc.
- Exterior and interior fixed ladders over 20 feet without landings.
- Unprotected mezzanine and balcony edges.
- Open excavations, pits, vaults, tanks, manholes.
- 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.
- 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.
- Mobile Elevated Work Platforms (see MEWP guidelines).

Fall Protection Safety Plan

Supervisors/Leads who have been designated to create a fall protection plan should do so for each job that requires the use of fall protection.

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

Use the Fall Protection Safety Plan form located in Appendix A&B of this document to:

Rescue Plan

A rescue plan must be implemented whenever there is risk of a fall hazard. During fall restraint operations where connection to a positioning device or lifeline that is set back from the fall hazard or when working at heights behind an engineered system such as a railing or a parapet, a rescue plan is not required.

When there is no other alternative other than fall arrest or similar, the manager or designated supervisor must develop a rescue plan. In the unlikely event that a fall arrest occurs on-site, personnel with the use of an articulating man-lift or ladders, where feasible, will be primary to rescue employees. Alternative rescue options are safety ladders engineered rescue devices, and personal trauma straps. Anyone who was involved in a fall while working at heights should be sent for observation and treatment to determine the extent of the injuries.

All falls occurring in the course and scope of work will be investigated by the supervisor/manager and EHS.

Contractors

Contractors working at CSUDH campus 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.

Training

Fall protection training is required for employees exposed to fall hazards. Training consists of awareness level training or competent person level training. Awareness level training is required for anyone who will be working at heights where there is risk of falls.

Awareness level training covers the recognition of fall hazards and methods to minimize. Reviews the type of fall protection equipment, what is appropriate to use and the hierarchy of controls.

Competent person level training is required for supervisors, leads or other designated staff who will be working at heights in a leadership role. There must be at least one competent person, on each job, where working at heights and the risk of falls are present.

This level training includes.

Re-Training

If the supervisor or competent person has reason to believe that any designated employee who has been trained does not understand or possess the skill required by Cal/ OSHA standards, the employer must retrain that employee. Retraining is 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 **SHALL** be kept for a minimum of three years an contain the following information:

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

Appendix

Appendix A – Fall Protection Safety Plan Appendix B – Job Hazard Analysis



FALL PROTECTION SAFETY PLAN

COMPTENT PERSON:	
SIGNATURE:	
DEPARTMENT:	
PROJECT:	
START DATE:	
END DATE:	
EXACT LOCATION:	
DESCRIPTION:	

AUTHROIZED WORKERS

NAME (FIRST, LAST):	
NAME (FIRST, LAST):	

QUESTIONAIRE

|--|

2. How will tools and equipment be brought to location?

3. Describe walking working surface?

4. Describe any environmental factors (wind, water, slippery surface):



5. How will activity below be protected and controlled?

6. Describe Rescue Plan:

COMPLETE APPENDIX B TO DESCRIBE HOW HAZARDS WILL BE CONTROLED

DIAGRAM

Draw out plant of jobsite, include protection methods, working height, access points, connection points and rescue equipment location if applicable.



Fall Protection Program Job Hazard Analysis

1000 E Victoria St.• Carson, CA 90747 Phone: 310-243-3000 • Office: 310-243-3171 www.csudh.edu/ehs

APPENDIX B

						-	Project:				
		Risk Assessment Matrix					•				
		Severity				Competent					
ty	Frequent - 4	High (16)	High (12)	Serious (8)	Medium (4)		person:				
ilide	Probable - 3	High (12)	Serious (9)	Serious (6)	Medium (3)						
Prob	Remote - 2	Serious (8)	Serious (6)	Medium (4)	Low (2)		Date:	10/1/2021			
I	mprobable - 1	Medium (4)	Medium (3)	Low (2)	Low (1)						
Re	Required PPE:										
Work Boots Gloves lany			yard	Safety Glasses Safety Vest ha			ass				
					State of the second sec			-			
]	
Re	quirec	l/Recom	mended	Trainin	gs:						
Fall Protection Awareness					Competent Person						
TASK							HAZARDS CONTROLS		.S	RAM	
Example: cleaning drains within 6' of roof edg					of roof ed	je	Slip, trip, falls	Engineering controls such as guardrails Tie off to fall restraint Fall arrest system Safety monitor only		Low 1 Low 2 Med 4 Ser 8	