8. Fall Protection Procedures
WAC 296-155-245

1.0 Fall Protection Introduction

If an employee is exposed to a fall hazard of ten (10) feet or more in height, the employee must use a fall restraint, fall arrest system, or positioning device system as described below.

Exceptions:

- The provisions of this part do not apply when employees are making an inspection, investigation, or assessment of work-place conditions prior to the actual start of construction work or after all construction work has been completed,
- Employees engaged in roofing on low-pitched (slope equal to or less than 4 in 12) roofs less than 50 feet wide, may elect to use a safety monitor system without warning lines.

2.0 Responsibilities

2.1 Competent Person

A "competent person" is an individual knowledgeable of fall protection equipment, including the manufacturer's recommendations and instructions for the proper use, inspection, and maintenance; and who is capable of identifying the existing and potential fall hazards; and who has the authority to take prompt corrective action to eliminate those hazards; and who is knowledgeable of the rules contained in this section regarding the erection, use, inspection, and maintenance of fall protection equipment and systems.

Supervisors can use the evaluation form in Appendix A to evaluate an employee for appointment as a competent person. Competence must be demonstrated and training provided to establish and maintain competence.

The competent person evaluates conditions:

- Identifies hazards
- Selects fall systems
- Trains users
- Fills out fall protection plans
- Installs systems
- Supervises
- Monitors
- Enforces
- Inspects
- Stops work when necessary

2.2 Qualified Person

One who has a recognized degree, certificate, or professional standing, or who has successfully demonstrated the ability to resolve fall protection and rescue problems.

The qualified person will design, install, and supervise:

- Horizontal lifelines
- Emergency removal (Coordinate with Fire Department before incident happens)
- Development of fall protection plan
- Evaluate anchorage on structures

The manufacturer of Fall Arrest System components is the qualified person as long as we install them per instructions.

2.3 Supervisor

- Appoint one or more employees to be the competent person. Use the evaluation form in Appendix A to evaluate employees for appointment as competent employees.
- Ensure employees are trained to identify and control fall hazards
- Enforce compliance with fall protection standards

2.4 Contractors and Effected Employees

Employees who have been assigned to work in areas where fall hazards exist must:

- Be knowledgeable in the fall protection equipment and procedures that apply to its proper use.
- Inspect fall protection devices and systems before use.
- Be able to fill out a fall protection work-site safety plan. (Appendix B)
- Identify existing hazards.
- Correct existing hazards.

Contractors must provide a copy of their Fall Protection Work Plan to the Pacific Lutheran University project manager before starting work on Pacific Lutheran University facilities.

3.0 Training

Employees who have fall exposures must be trained to identify those exposures. If an employee will require the use of fall arrest system equipment, the employee shall be trained to use and maintain the equipment.

4.0 Fall Protection Work Plan

A fall protection work plan will be filled out for each instance where fall protection is required. See Work Plan Form in Appendix B.

Employees who have received fall protection training are capable of identifying work-place hazards, filling out the fall protection work-site plan, and are expected to correct, wherever possible, unsafe work-place conditions that they may be exposed. Every employee has the authority to correct hazards when they are able to do so. If they are unable to correct the hazard, or provide adequate protection, then work must be postponed until the supervisor and/or competent person can be contacted for guidance in correcting the hazards.

4.1 Emergency Response

An employee who falls must be rescued within 15 minutes to avoid permanent physical harm. The local fire department should be notified before the work is done in order to prepare for a prompt and effective rescue. The Environmental Health & Safety Manager can assist you in coordinating emergency response planning for your fall protection work plan.

5.0 Safe Access to Elevated Surfaces

All employees of Pacific Lutheran University will ensure that they use safe access to get onto and off of an elevated surface.

Employees will ensure that they do not expose themselves to a fall hazard by walking across a roof surface without a properly adjusted lifeline that is hooked to a proper anchor.

6.0 Fall Protection Equipment

Fall Protection equipment includes, but is not limited to, the following:

6.1 Full Body Harness

An approved Class III full body harness must be used. The harness must properly fit the employee who will be using it.

6.2 Lanyards and Lines

- Safety lines and lanyards will be protected against being cut or abraded.
- Lanyards must be adjusted so their length is only long enough to allow the employee the ability to move to the sides or edge of the roof, and no further. The reason for this is to prevent the employee from being able to actually fall off of the roof.
- Lanyards must have a minimum tensile strength of 5,000 pounds.
- The attachment point of the lanyard to the body harness must be located in the center of the wearer's back near shoulder level, or above the wearer's head.

6.3 Hardware

- Hardware must be drop forged, pressed or formed steel, or made of materials equivalent in strength.
- Hardware must have a corrosion resistant finish, and all surfaces and edges must be smooth to prevent damage to the attached body harness or lanyard.
- All components of body harness systems, unless otherwise specified, must be capable of supporting a minimum fall impact load of 5,000 pounds (fall arrest) or 4,000 pounds (fall restraint) applied at the lanyard point of connection.
- Employees are not allowed to use Vertical or Horizontal lifelines.

6.4 Anchors

- Full body harness systems used for fall arrest must be secured to anchorages capable of supporting 5,000 pounds per employee.
- Anchorage points used for fall restraint must be capable of supporting four (4) times the intended load.

6.5 Snap Hooks

- Snap hooks must be self-closing and self-locking
- Snap hooks may not be connected to loops made in webbing type lanyards.
- Snap hooks may not be connected to each other.
- Not more than one snap hook may be connected to any one D ring unless they are the double locking type.

6.6 Inspection of Components

- Full body harness systems must be inspected prior to each use. Inspect for mildew, wear, damage, other deterioration, and defective components. Remove from service when the function or strength has been adversely affected.

- Systems or components that have been subjected to impact loading (a fall) must be immediately removed from service and not used again unless inspected and determined by a competent person to be undamaged and suitable for reuse.
- Fall protection equipment must be inspected at least twice each year by a "competent person" according to the manufacturer's recommendations. This inspection shall be recorded. Defective equipment shall be removed from service immediately.

6.7 Storage

Fall protection equipment shall be stored where protected from environmental factors, such as heat, light, excessive moisture, oil, chemicals and vapors, and any other damaging factors.

7.0 Guarding Of Low Pitched Roof Perimeters

7.1 General provisions

During the performance of work on low-pitched roofs with a potential fall hazard greater than 10 feet, all employees engaged in the work must use the proper protection as follows:

- Fall restraint or fall arrest systems
- Warning line and safety monitor combination system when they are working between the warning line and the roof edge.
- Mechanical equipment can only be used or stored in areas where employees are protected by a warning line system, or fall restraint, or fall arrest systems. Mechanical equipment cannot be used or stored where the only protection is provided by the use of a safety monitor.

7.2 Exceptions

- Fall restraint or fall arrest systems are not required at points of access such as stairways, ladders, and ramps, or when employees are on the roof only to inspect, investigate, or estimate roof level conditions.
- Employees engaged in roofing on low-pitched roofs less than fifty (50) feet wide, may elect to use a safety monitor system without warning lines.

7.3 Warning Line Systems

Warning lines must be erected around all sides of the work area.

- When mechanical equipment is not being used, the warning line must be erected not less than 6 feet from the edge of the roof.
- When mechanical equipment is being used, the warning line must be erected not less than 6 feet from the roof edge that is parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge that is perpendicular to the direction of mechanical equipment operation.

The warning line must consist of a rope, wire, or chain and supporting stanchions erected as follows:

- The rope, wire, or chain must be flagged at not more than 6-foot intervals with high visibility material.
- The rope, wire, or chain must be rigged and supported in such a way that its lowest point (including sag) is no less than 36 inches from the roof surface and its highest point is no more than 42 inches from the roof surface.
- After being erected, with the rope, wire or chain attached, stanchions must be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the roof surface, perpendicular to the warning line, and in the direction of the roof edge.
- The rope, wire, or chain must have a minimum tensile strength of 200 pounds, and after being attached to the stanchions, must be capable of supporting, without breaking, the loads applied to the stanchions.

- The line must be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

Access paths must be erected as follows:

- Points of access, materials handling areas, and storage areas must be connected to the work area by a clear access path formed by two warning lines.
- When the path to a point of access is not in use, a rope, wire, or chain, equal in strength and height to the warning line, must be placed across the path at the point where the path intersects the warning line erected around the work area.

7.4 Roofing Brackets

A roofing bracket is a bracket used in sloped roof construction, having provisions for fastening to the roof or supported by ropes fastened over the ridge and secured to some suitable object.

- Roofing brackets may be constructed to fit the pitch of the roof.
- Brackets can be secured in place by nailing in addition to the pointed metal projections. The nails shall be driven full length into the roof.

8.0 Roof Edge Material Handling Areas

Employees working in a roof edge materials handling or materials storage area located on a low pitched roof with a ground to eave height greater than 10 feet must be protected from falling along all unprotected roof sides and edges of the area.

- When guardrails are used at hoisting areas, a minimum of 4 feet of guardrail must be erected on each side of the access point through which materials are hoisted.
- A chain or gate must be placed across the opening between the guardrail sections when hoisting operations are not taking place.
- When guardrails are used at bitumen pipe outlet, a minimum of 4 feet of guardrail must be erected on each side of the pipe.
- When safety belt/harness systems are used, they must not be attached to the hoist.
- When fall restraint systems are used, they must be rigged to allow the movement of employees only as far as the roof edge.
- Materials must not be stored within 6 feet of the roof edge unless guardrails are erected at the roof edge.

Appendix A. Competent Person Evaluation Form

Employee's Name _____Position _____

Length of Time w/ Employer_____ Length of Experience in Fall Protection_____

TRAINING"

Does the named individual have training in:	**YES**	**NO**
• Use of fall protection equipment		
• Inspection requirements of fall protection equipment		
• Maintenance of fall protection equipment		
• Storage of fall protection equipment		
• Identifying fall hazards		
• Requirements of the fall restraint & fall arrest standards		
• Current first aid		

KNOWLEDGE

Does the named individual have knowledge about:	**YES**	**NO**
• Fall hazards		
• Use of protective systems		
• Requirements of the standards		
• Residual risk classifications		
• Fall protection work plans		
• Emergency removal		
• Line capacity		

AUTHORITY

Does the named individual have authority to:	**YES**	**NO**
• Take prompt corrective measures to eliminate existing and predictable hazards		
• Stop work until hazards are corrected or eliminated or controlled and remove employees from the hazardous area until proper systems are in place		

COMMENTS

	YES	**NO**
Do you consider the named individual to be COMPETANT within the requirements of the FALL RESTRAINT AND FALL ARREST STANDARD?		
If not, WHY? **Areas to be strengthened:**		

Employer Representative Signature_____Date of evaluation by employer _____

Appendix B. Fall Protection Work Plan

In accordance with WAC 296-155, the following Fall Protection Program is hereby formulated for PLU.

Identify all fall hazards in the work area during construction:

- Leading edges _____
- Perimeter edge _____
- Elevator openings_____
- Stairway openings _____
- Open-sided floors or decks _____
- Articulated snorkel lifts _____
- Scaffolds _____
- Stairways _____
- Vertical form faces_____
- Other _____

Identify methods

Elevations of six (6) feet or greater

- Full body harness/lanyards _____
- Safety belt/lanyards _____
- Horizontal and vertical line _____
- Standard guardrails with toeboard _____
- Scaffolding with work platform and handrails _____

Deck/Floor Openings

- Standards guardrails with toeboard _____
- Deck over_____
- Other (explain) _____

_____

_____

Fall protection plan

Stairways and elevator openings

- Handrails _____

Articulated Lifts and Manlifts

- Standard railing _____
- Safetybelt/harness and lanyard _____

Scaffolds

- Guardrails and toeboards _____

Other

- _____

Training

Documentation of training available Yes □ No □

Location of Documentation _____

Fall protection system procedures

Fall protection systems will be assembled by:

Name: _____

Name: _____

Equipment or systems used will be maintained as necessary by:

Name: _____

Name: _____

Inspection of equipment or systems used will be performed by:

Project Supervisor _____

Work lead _____

Methods of providing overhead protection

- Barricading (eliminating access) _____
- Warning signs posted _____
- Hard hats required _____
- Toeboards installed around floor openings _____
- Other (explain) _____

Method for prompt, safe removal of injured worker

- Initiate emergency medical system (**911**) _____
- Utilize lift truck with personnel platform _____
- Utilize articulated boom lift basket _____
- Erect ladders _____
- Use drop lines or retraction device _____
- Assist medical, fire or emergency response teams _____
- Other (explain) _____