Introduction

The purpose of this document is to provide Fall Protection and Restraint work procedures for Eastern Washington University (EWU) that establish safe work practices and protection for employees working in applicable industry with hazards requiring worker fall restraint, confined space, or engulfment recovery. Washington Department of Occupational Safety and Health (DOSH) revisions for fall protection will unify standards for worker safety across all industry trades. With implementation of Unified Fall Protection from DOSH, fall protection and restraint will begin at four (4) feet or higher instead of previous six (6) and ten (10) foot rules in General and Construction industry work on EWU campuses.

Maintenance of all fall protection equipment and knowledge of work procedures shall be a collaborative work effort shared with respective department employees, supervisors, and the EWU EH&S department for the assembly, disassembly, handling, inspections, use, and storage of fall protection equipment during safe work procedures. Any variance from guidelines set forth in this document for work procedures must be addressed by competent person(s) and a department supervisor for approval by the employee's supervisor and the Manager of Environmental Health and Safety.

All EWU employees in **Fall Protection and Restraint** must comply with these provisions of the following Washington Administrative Codes:

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Always	Open-sided floors, walkways and platforms	WAC 296-800-26010-1	Guard open-sided floors, walkways and platforms above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and other similar hazards, regardless of height with a railing and toe-board	**ALL**	
Always	Elevating work platforms	WAC 296-869-60035	All persons on the platform are wearing fall protection devices and other safety gear if required	**ALL**	Guardrails are the primary means of fall protection for manually propelled elevating work platforms
Always	General industry platforms	WAC 296-24; Part J-3	All persons on the platform are wearing fall protection devices and other safety gear if required	**ALL**	Requirements apply to all general industry operations using powered platforms
Always	Powered Industrial Trucks (PITs)	WAC 296-863-20025	Ensure order pickers are equipped with standard guardrails along open sides OR use a safety harness and lanyard that are connected to a tie off point that has been approved by the PIT manufacturer	**ALL**	
Always	Powered Industrial Trucks (PITs)	WAC 296-863-40060	Make sure work platforms have standard guardrails and toe boards on all sides	**ALL**	

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Always	Confined Spaces	WAC 296-809-60004	When entrance covers are removed, promptly guard the opening with a railing, temporary cover, or other temporary barrier to prevent accidental falls through the opening and protect entrants from objects falling into the space	**ALL**	
Always	Confined Spaces	WAC 296-809-50016	Ensure each entrant uses a full-body harness with a retrieval line attached to the harness at the center of the employee's back, near shoulder level; or above the employee's head; or at another point which presents a profile small enough for the successful removal of the employee. Then attach the retrieval line to a mechanical device or fixed point outside the space, so rescue can begin as soon as necessary	**ALL**	Non-entry rescue
Always	Working above or adjacent to dangerous equipment	WAC 296-155-24607-1	Regardless of height, open sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, such as dip tanks and material handling equipment, and similar hazards shall be guarded with a standard guardrail systems	**Construction**	
Always	Floor holes and floor openings	WAC 296-155-24607-2	Floor holes and floor openings into which persons can accidently walk shall be guarded by either a standard railing with standard toeboards on all exposed sides, or a cover of standard strength and construction that is marked and secure against displacement. While the cover is not in place, the opening or hole shall be protected by a standard railing	**Construction**	Guardrail specifications are under WAC 296-155-24615-2 Cover specification are under WAC 296-155-24615-3
Always	Impalement hazards such as exposed rebar or wood stakes	WAC 296-155-24607-3	Regardless of height, employees shall be protected from falling into or onto impalement hazards; such as: reinforcing steel (rebar), or exposed steel or wood stakes used to set forms	**Construction**	
Always, if required (pod & scissor lift)	Elevating work platforms	WAC 296-869-60035	All persons on the platform are wearing fall protection devices and other safety gear if required	**ALL**	Always use when working outside fall restraint protection

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Four (4) feet	Open-sided floors and platforms	WAC 296-800-26010-1	Guard open-sided floors and platforms 4 feet or more above adjacent floor or ground level by a railing. The entrance to a ramp, stairway, or fixed ladder does not need a railing	**ALL**	
Four (4) feet	Elevated work	WAC 296-32-270-1	General. Safety belts and straps shall be provided and the employer shall ensure their use when work is performed at positions more than 4 feet above ground, on poles, and on towers	**Communication**	No safety belts, safety straps or lanyards acquired after January 1, 1976, may be used unless they meet the tests set forth in chapter WAC 296-45
Four (4) feet	Form and rebar work	WAC 296-155-24609-6	When exposed to a fall height of 4 feet or more, employees placing or tying reinforcing steel on a vertical face are required to be protected by personal fall arrest systems, safety net systems, positioning device systems	**Construction**	
Four (4) feet	Walking or working surfaces	WAC 296-155-24609-1	The employer shall ensure that the appropriate fall protection system is provided, installed, and implemented according to the requirements in this part when employees are exposed to fall hazards of four feet or more to the ground or lower level when working on a walking or working surface	**Construction**	
Four (4) feet	Hatchways and chutes	WAC 296-155-24609-4c	Hatchways and chute floor openings shall be guarded by a hinged cover of standard strength and construction and a standard guardrail system with only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard guardrail systems	**Construction**	
Four (4) feet	Hazardous slopes	WAC 296-155-24609-8	Employees exposed to falls of 4 feet or more while working on a hazardous slope shall use personal fall restraint systems or positioning device systems	**Construction**	
Four (4) feet	Low-pitch roofs (4:12 or less)	WAC 296-155-24609-7b	Employers shall ensure that employees exposed to fall hazards of 4 feet or more while engaged in work, other than roofing work or leading edge work, on low pitched roofs use a fall protection system	**Construction**	

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Four (4) feet	Open-sided floors, walkways and platforms	WAC 296-155-24609-2	Every open-sided walking or working surface or platform 4 feet or more above adjacent floor or ground level shall be guarded by a fall protection system	**Construction**	
Four (4) feet	Wall openings	WAC 296-155-24609-5a	Wall openings, from which there is a fall hazard of 4 feet or more, and the bottom of the opening is less than 39 inches above the working surface, shall be guarded as follows: - When the height and placement of the opening in relation to the working surface is such that either a standard rail or intermediate rail will effectively reduce the danger of falling, one or both shall be provided. - The bottom of a wall opening, whichever is less than 4 inches above the working surface, regardless of width, shall be protected by a standard toe board or an enclosing screen either of solid construction or as specified in WAC 296-155-24615-2	**Construction**	
Four (4) feet	Ramps, runways, walkways including walkways that cross excavations	WAC 296-155-24609-3a, b	Ramps, runways, and inclined walkways that are 4 feet or more above the ground or lower level shall be equipped with a standard guardrail system or the equivalent, as specified in WAC 296-155-24615-2, along each open side. Wherever tools, machine parts, or materials are likely to be used on a runway, a toe board shall also be installed on each open side to protect persons working or passing below	**Construction**	Runways used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate such omissions, provided the falling hazard is minimized by using a runway not less than 18-inches wide
Four (4) feet	Skylight openings	WAC 296-155-24609-4d	Wherever there is danger of falling through an unprotected skylight opening, or the skylight has been installed and is not capable of sustaining the weight of a two hundred pound person with a safety factor of four, standard guardrails shall be provided on all exposed sides in accordance with WAC 296-155-24615-2; or the skylight shall be covered in accordance with WAC 296-155-24615-3	**Construction**	Personal fall arrest equipment may be used as an equivalent means of fall protection when worn by all employees exposed to the fall hazard

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Four (4) feet	Pit and trap doors	WAC 296-155-24609-4e	Pit and trap door openings shall be guarded by floor opening covers of standard strength and construction. While the cover is not in place, the pit or trap openings shall be protected on all exposed sides by removable standard guardrail system	**Construction**	
Four (4) feet	Working above the ground on poles, towers, or similar structures	WAC 296-45-25510-12	Fall arrest equipment, work positioning equipment, or travel restricting equipment shall be used by employees working at elevated locations more than 4 feet above the ground on poles, towers, or similar structures if other fall protection has not been provided. Fall protection equipment is not required to be used by a qualified employee climbing or changing location on poles, towers, or similar structures, unless conditions, such as, but not limited to, ice, high winds, the design of the structure (for example, no provision for holding on with hands), or the presence of contaminants on the structure, could cause the employee to lose his or her grip or footing	**Electrical High Voltage**	Requirements for fall protection associated with walking and working surfaces are contained in WAC 296-155-246; requirements for fall protection associated with aerial lifts are contained in chapter 296-869 WAC
Five (5) feet	Confined Spaces	WAC 296-809-50016	If the vertical space is more than 5 feet deep, a mechanical device must be available for retrieval	**ALL**	Non-entry rescue
Ten (10) feet	Scaffolding	WAC 296-874-20052	Protect each employee on a scaffold more than 10 feet above a lower level, by providing personal fall arrest systems or guardrails	**ALL**	A fall protection work plan is not required for persons working from a scaffold
Ten (10) feet	Fall Protection Work Plan (FPWP)	WAC 296-155-24611-2	The employer shall develop a written FPWP including each area of the work place where the employees are assigned and where fall hazards of 10 feet or more exist	**Construction**	

Fall Protection Trigger Height	Equipment Activity or Surface	Applicable WISHA Standard	Requirement	Applicable Industry	Applicable Notes
Ten (10) feet	Roofing work on low slopes (4:12 or less) & Leading edge work *not the edge of the building	WAC 296-155-24611-1a, b	The employer shall ensure that the appropriate fall protection system is provided, installed, and implemented according to the requirements in this part when employees are exposed to fall hazards of 10 feet or more to the ground or lower level while: Engaged in roofing work on low pitched roof - Constructing a leading edge - Working on any surface that does not meet the definition of a walking or working surface not already covered in WAC 296-155-24609. - Engaged in excavation and trenching operations	**Construction**	WAC 296-155-24611-1b If you are working on a roof, floor/deck where leading edge work is taking place and a surface has been laid that is 45 inches or more in all directions AND you are not engaged in the leading edge work, then you are required to implement fall protection at 4 feet
Ten (10) feet	Surfaces that are not 45 inches or more in all directions (except ramps, runways, walkways & platforms)	WAC 296-155-24611-1c	See WAC 296-155-24611-1a-c	**Construction**	
Ten (10) feet	Excavation	WAC 296-155-24611-1d	See WAC 296-155-24611-1a-c	**Construction**	Fall protection required at 10 for employees in the affected area of an excavation who: - Aren't directly involved OR - Are on the protective system or any other structure in the excavation

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General Requirements for Supervisors

Supervisors of any employee(s) working at heights that have a fall hazard of four (4) feet or greater must implement this document's procedures and must read, understand, and comply with DOSH's Unified Fall Protection Standard. This rule encompasses the Washington Administrative Codes (WAC) and corresponding industries related to worker fall protection and restraint.

The supervisor is responsible for ensuring that prior to the initiation of any job or project all fall hazards are identified in the work area. Jobs or projects that may include fall hazards include, but are not limited to, projects that involve work on roofs, platforms, scaffolds, ramps, walkways, pits, window openings, elevator shafts, and stairwells. If it is determined that the University construction job or project has employees exposed to a fall hazard of ten (10) feet or greater, then a fall protection work plan must be developed. If a supervisor cannot complete or does not know how to create a fall work protection plan, consult EH&S for help. A fillable Fall Protection Work Plan for construction or new installation work can be found at the EH&S website, under Shop Safety and Forms.

It is important that supervisors recognize which applicable industry governs the type of work performed by their employees during Fall Protection and Restraint. General industry will apply in the majority maintenance or servicing performed by EWU staff. Be aware, exceptions exist for Electrical High Voltage, Construction, and Telecommunication work to be completed.

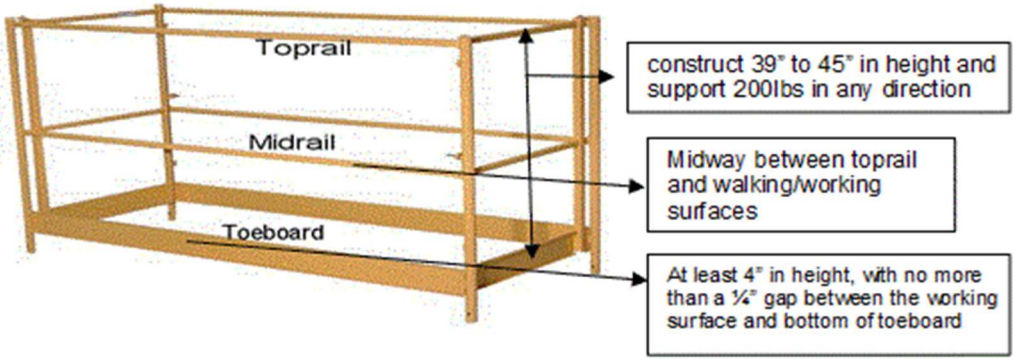
Supervisors will choose between the three following methods for fall protection: fall restraint, fall arrest, or positioning system devices. Due to the hazards present or the difficulty of installing certain fall restraint protection plans in some work areas, supervisors may need to rely on a combination of methods rather than on a singular method by itself.

Fall restraint

Fall restraint provides limitations for employee(s) to reach hazard(s) prior to a fall event. It assumes that an employee cannot reach a leading edge fall hazard. In restraint, a worker completes their job function in containment or with limited movement tethered to an anchor point. If at any time a worker can reach a leading edge and fall over, he/she msut be in fall arrest. Personal fall arrest systems can be used in fall restraint if correctly attached. Personal fall arrest components are covered in, 'Fall arrest protection' starting on page nine (9) of this procedure.

Guardrails

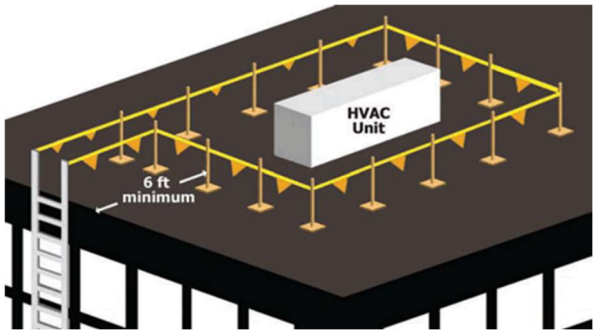
Standard guardrails will have a top rail, intermediate rail, toe board, and posts and a vertical height of 39" to 45" from upper surface of top rail to floor, platform, runway or ramp level and the ends of the rails shall not overhang the terminal posts. Of which, any top or hand rail must support a two-hundred (200) pound load force from any direction, and have mounting or brackets of posts not to exceed more than eight (8) feet apart. Rails should not overhang posts or mounts to create a projection or impalement hazard.



Warning lines

Deployment of warning lines occur at low-pitch (less than 4:12) surface dimensions greater than forty-five (45) inches in all directions. Warning lines require completion of a Fall Protection Work Plan. Necessary requirements for installing warning line systems include:

Example of a warning line system:



- Warning lines must encompass all sides of the work area, with visible flagging every six (6) feet
- Chain, rope, or wire used for constructing the warning line thirty-six must be placed between thirty-six (36) or and forty-five (45) inches from the work surface. Taunt, no slack attachment is required at all stanchions
- Supporting stanchions for warning line systems must resist a perpendicular side force of at least sixteen (16) pounds at thirty (30) inches above the work surface without tipping over in the direction of the leading edge
- Any chain, rope, or wire used in constructing warning lines shall have a minimum tensile strength of two-hundred (200) pounds, without breaking after attachment to supporting stanchions
- A minimum distance of six (6) feet will be observed when installing warning lines without mechanical/mobile equipment; if using mechanical/mobile equipment, observe six (6) feet from work edge parallel to equipment operation and ten (10) feet perpendicular to the operation of equipment
- Points of access, materials handling areas, and connecting storage areas to the work area will require a clear access path formed by two warning lines. When the path to a point of access is not in use, placement of a chain, rope, or wire equal in strength and height to the warning line, must be inserted across the access path intersecting the established warning line system around the work area.
- Work outside of the warning line must utilize a personal fall arrest system
- Materials will not be stored within six (6) feet of the roof edge unless, installation of a guardrail system at the leading edge is complete

Safety monitor systems

Used in conjunction with warning lines, safety monitor systems (SMS) guard against falls on low-pitch (less than 4:12) surfaces and leading edge work. When a SMS is used, the supervisor or competent person will address the SMS in a fall protection work plan, include the name of the safety monitor(s) and the extent of their training in both the safety monitor and warning line systems. The safety monitor system will not be used when adverse weather conditions create additional hazards.

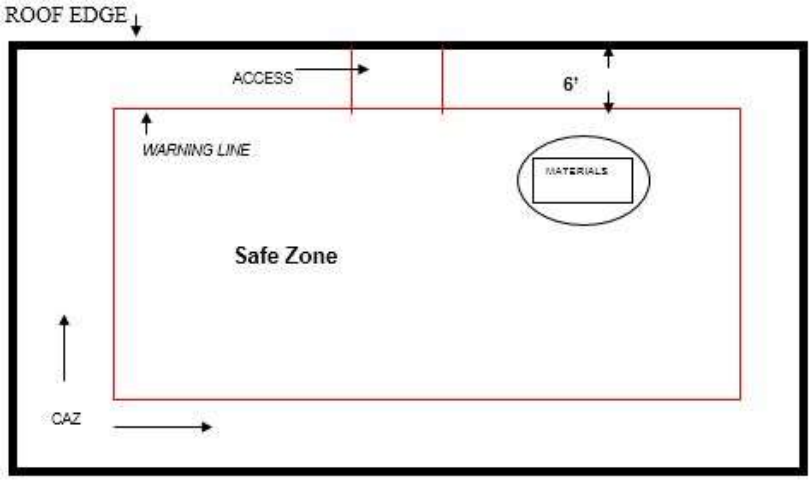
For employees to serve as a safety monitor, functional knowledge of warning lines and safety monitoring systems must be exhibited before beginning. The safety monitor must:

- Act as a competent person with authority to control work as it relates to Fall Protection and Restraint
- Be instantly distinguishable from members of the work crew (such as, wearing a brightly colored vest)
- Be positioned in relation to the workers under their protection, so as to have a clear, unobstructed view and be able to maintain normal voice communication
- Supervise no more than eight exposed workers at one time. Warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner
- While acting as safety monitor, he/she will engage in no other duties
- Safety monitors may only be used as the sole means of fall protection on low-pitched roofs of fifty (50) feet wide or greater

Leading edge work

When performing leading edge work on low-pitched roofs, ensure that a Control Access Zone (CAZ) is established. A CAZ is the area between the warning line and the unprotected sides of the walking/working surface. The CAZ begins six (6) feet back from the leading edge, separated from other work areas by means of an additional warning line.

At all times when performing work within a CAZ, personal fall arrest or fall restrain must be used. If personal fall arrest or restraint systems are not feasible, a safety monitor will be implemented for worker safety. A warning line is not mandatory on low-pitched roofs less than 50' wide, but a safety monitor is still required.

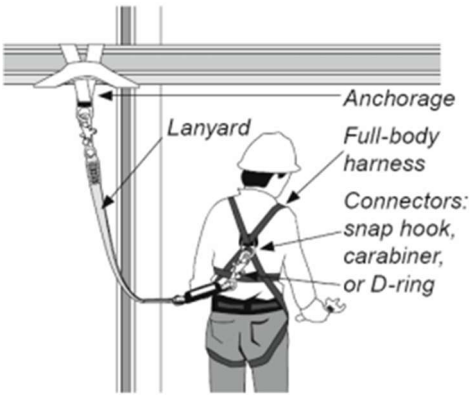


Example of leading edge work with a controlled access zone (CAZ)

Fall arrest protection

Fall arrest protection must include personal fall-arrest, but may also include either a safety net and/or catch platforms. It is mandatory to inspect all fall arrest protection prior to each use, after initial anchorage mounting and thereafter, with engineered design for safety net and catch platform systems.

A personal fall-arrest system



Personal fall-arrest systems

The personal fall arrest system is an assembly of components joined together so that when the assembly is connected to a fixed support, it is capable of arresting a worker's fall. Fall arrest systems must keep a worker from hitting the ground, a level below, or other hazards and objects below. A complete fall arrest system consists of a full-body harness, a lanyard, and a shock absorbing device.

Understanding how personal fall-arrest systems work, knowledge of the components, order of assembly, and how to inspect the components items prior to use is critical in providing fall-arrest for worker safety. All personal-fall arrest protection has a maximum service life of five (5) years after initial opening and use.

Full body harness

Manufacturing of these apparatuses are with features that arrest accidental vertical or near vertical fall of a worker. Full body harnesses disperse the impact forces of a fall by means of leg and shoulder strap supports and an upper dorsal suspension assembly to a greater area of the harness wearer's body. When fall arrest occurs, a full body harness will not permit the release or further lowering of a suspended worker when properly worn by the employee.

Full-body harness use for positioning combines a restraint lanyard attached to the front "D ring", or either side D-rings if equipped. The front D-ring of a harness is designed for positioning only when completing hands free work in front of the employee. Side D-rings, likewise, are exclusively the same as a front D-ring, except when working from the workers' left or right side hands free. Front and side D-ring use is limited to a fixed or length adjustable positioning or restraint lanyard when working hands-free.

The back D-ring is the only lanyard mounting location engineered for safe personal fall arrest. Failure to correctly mount a fall-arrest lanyard may interfere with fall protection clearances or create bodily damage and/or injury to the worker wearing a full body harness. Shock absorbing lanyards or de-acceleration devices should only be attached to the back D-ring. Improperly or loose fitting harnesses can injure or harm workers. Please refer to Appendix A, **How To Don a Harness** at the end of this procedure.

Fixed lanyards

Line of rope, wire rope, or strap engineered for weight-rated connections at each end for joining a positioning body belt or a full body harness to a deceleration device, lifeline, or anchorage.

Shock absorber lanyard or de-acceleration devices

A shock absorber lanyard is a fall protection component that slows and cushions a fall. It is often made of "tear webbing" with specific stitch patterns that absorb the force of impacts.

Flexible Shock Absorber Lanyard

Lanyard with Shock Absorber

Shock absorber lanyards are best suited for roofing work or in areas where one could free-fall, allowing de-acceleration before coming to a stop. Positioning lanyard design keeps you in place, limiting or providing no give or a full stop. Positioning lanyards are best suited for aerial lifts or leading edge work with anchorage and lifeline systems.

All lanyards must have date of service use checked, proper connector lock function, and inspection of webbing and stitching for any cuts, fraying, tears, or UV damage prior to each use.

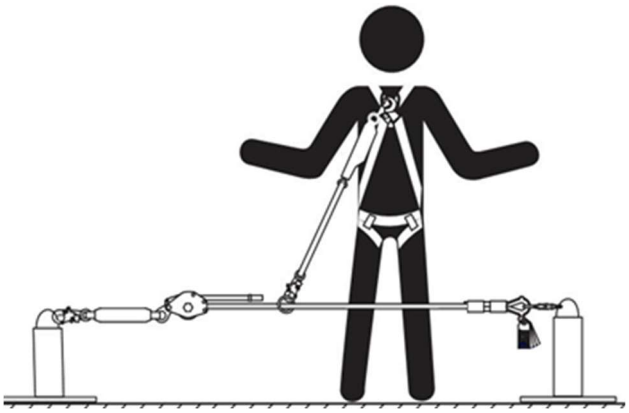
Anchorage

Engineered connector points designed for either fall restraint (3000lb) per employee or fall arrest (5000lb) component tethering to building, construction, or equipment platform systems per employee maintaining a safety factor of at least two (2) times. These connectors vary in mounting and securing methods, for permanent or temporary securement. It is critical to assess potential worker loads prior to start of fall restraint work. Prevention of anchorage failure or inadequate shoring can avert worker(s) injury and potential falls. Anchor securement typically involves lifelines, but also has applications in worker positioning for construction, iron and rebar work.

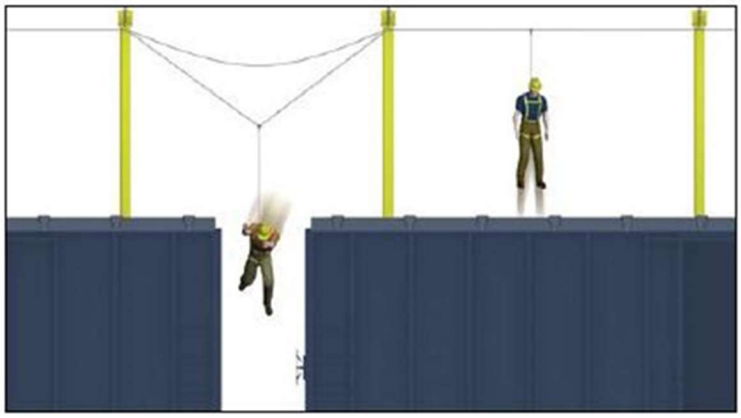
Lifelines

A flexible cable, line, or rope for connection to an anchorage at one end to suspend vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage. If using a horizontal lifeline, determine possible load deflection (load sag) in required fall distance calculations before attaching in fall restraint or personal fall arrest.

Horizontal lifeline with anchorage, shock absorber, and tensioner



Vertical lifeline application



Account for horizontal lifeline loading and worker safety

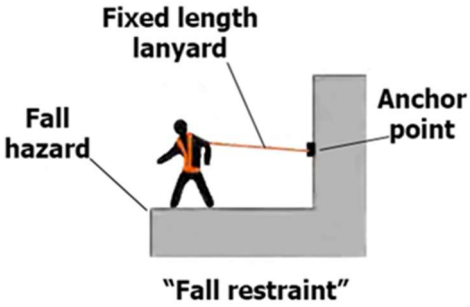
Self Retracting Lifelines (SRLs)

Deceleration devices containing a drum-wound line which can be slowly extracted from, or retracted onto; possessing a integral clutch mechanism to limit worker movement after the onset of a free-fall. These devices allow freedom of movement for employees, while providing fall restraint and/or fall arrest depending upon installation and product choice. NEVER set up a fall restraint SRL for any fall arrest applications.
(Remember: fall restraint is a 3000lb minimum, whereas fall arrest is a 5000lb minimum requirement)

Examples of Self-Retracting Lifeline types

Features of SRL use:

- The anchorage used must meet or exceed the rating of the SRL
- SRLs require less than two feet to arrest a free fall
- Reduce the risk of hitting the ground or other objects at a lower level
- Provide a safe and easy rescue if needed
- SRLs prevent lifeline entanglement and provide easy line retraction
- Can be attached to the front harness D-ring for situations such as ladder climbing
- Fall distance for potential free fall will limit injury and/or allow worker's ability to regain ladder footing



Catch Platforms

A catch platform is a temporary platform located below a work area to catch a worker in the event of a fall. The platform should be of robust construction and designed to withstand the maximum potential impact load of the worker(s), equipment, and tools. Scaffolding components maybe used to construct fixed and mobile catch platforms.

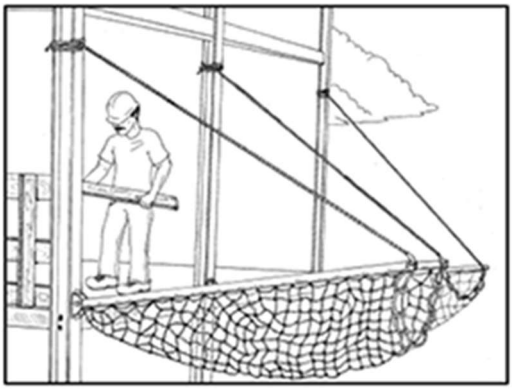
Mobile Catch Platform

Construction of catch platforms must be no lower than ten (10) feet from the fall leading edge. Width of catch platform(s) must be at least as wide as the fall distance, never less than forty-five (45) inches. Storage of items on catch platforms is not allowed.

Fixed Catch Platform installation

Safety Nets

This type of fall arrest comes as an engineered product rated for prescribed fall-heights, load capacity, opening sizes, and abrasion/chemical/weather resistance standards. Installation of safety nets must be as close as practicable under the surface on which employees are working, but in no case more than 30 feet below. When using netting under bridges or spans, the potential fall area must be unobstructed for the worker.



If used, all safety nets must extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet
5 to 10 feet	10 feet
More than 10 feet	13 feet

Positioning device systems

Different from fall restraint and fall arrest, positioning devices fix and support the worker while on an elevated vertical surface. Leaning from walls, ironwork, or towers while conducting hands-free work necessitates the use of positioning device systems with fall-arrest.

Unique requirements of positioning device systems include:

- Limits for worker free-fall to a maximum of twenty-four (24) inches
- Incorporates full-body harness and fixed lanyard use with positioning device
- All anchorage, fall-arrest, and positioning equipment cannot have a breaking strength less than 5000lbs

Supervisors as a competent person(s) must ensure that employees are trained to implement all Fall Protection and Restraint procedures and their corresponding industry requirements. Supervisors shall not knowingly permit the use of any fall restraint, fall arrest, positioning system device, and/or equipment that they reasonably believe is damaged, defective, deteriorated, worn, or was exposed to a fall.

Supervisors and employees will share responsibility alike for the inspection of defective equipment. It is upon the supervisor to destroy/tagout deployed and/or faulty equipment to ensure removal from service use. Oversight for proper assembly, disassembly, inspection, maintenance, and storage of all EWU fall restraint, personal fall-arrest, and positioning device systems will be managed by that departments' supervisor to ensure worker safety.

General Requirements for Employees

EWU employees assigned to work at elevated heights are responsible for adhering to the procedures contained in this document. Requirements set forth by the State of Washington in all sections of the Washington Administrative Code pertaining to worker safety regarding Fall Protection and Restraint must be followed for prevention of unsafe work at elevated heights.

Associated risks when working in certain work environments, with equipment, or at heights greater than four (4) feet mandate the use of fall protection or restraint for employee safety. When exposed to fall hazards, the worker must take precaution to understand basic principles associated with the type of fall arrest, restraint, and/or positioning equipment provided to complete their work duties. In no way shall EWU employee(s) modify, subvert, or use fall equipment in a manner inconsistent with manufacturer guidelines and specifications.

Prior to beginning work, employees must assess the workplace for changing conditions, environments, and that could affect their job duties at elevated working heights. Before the onset of work, workers must thoroughly inspect items or systems components of each fall device before donning or implementing their use. Employee operation of fall equipment and installations must be conducted under the instruction of the competent person assigned to the work being performed. If an employee does not understand the function, limitation, mechanics, or purpose of a fall device; work shall not be performed until appropriate guidance is provided and effective fall protection and restraint knowledge/operation is demonstrated by the employee.

Workers shall not use equipment that they know or reasonably believe is defective. If any component device or body harness is subject to a fall, it must be immediately removed from service. Employees shall notify their supervisor upon discovery of following:

- Injury to one's self or a co-worker when in fall protection
- Damage, defective component, or deterioration of a fall arrest, restraint or positioning device
- Deployment of a worker's fall arrest
- Modification to work conditions that may alter existing fall hazards or create new ones

All employees assigned to fall protection work will adhere to the most current American National Standards Institute (ANSI) and American Society of Safety Engineers (ASSE) Standard, Z359. Conformance to this standard outlines the most recent implementation(s) for application, definition, design, nomenclature, and requirements for fall arrest, restraint, fall positioning, and rescue equipment components and devices.

Requirements for Care and Inspection of Fall Equipment and Devices

Standard care for equipment systems should follow regular housekeeping to prevent deterioration and wear to gear. Workers shall protect and store fall equipment away from consistent abrasive, damp, and ultraviolet exposures. Fall arrest and fall restraint systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service. Completion of a inspection form should be filled out every time fall protection equipment is used. Review these EWU EH&S fall protection inspection forms:

- Anchorage Connector Inspection Form
- Harness Inspection Form
- Horizontal Lifeline Inspection Form
- Lanyard Inspection Form
- SRL Inspection Form
- Rope Termination Form
- Vertical Lifeline Inspection Form

If any fall arrest, restraint, positioning device, or rescue equipment is found to be subjected to a fall, removal from its service shall be immediate. Until inspected and declared suitable by the original manufacturer, any affected component cannot be used.

Wire cable or rope examinations should reveal no broken wire strands, flattening, fraying, kinks, knotting, or a loss in diameter (broken internal strands). Likewise, fiber rope inspections follow similar guidelines. Each additional fall protection component will affect overall stopping distances. Evidence of chemical, heat damage, detriment from mildew, or accumulated dirt/grease. When setting up a fall prevention plan, the following fall distance measurements should be referenced to determine fall clearances.

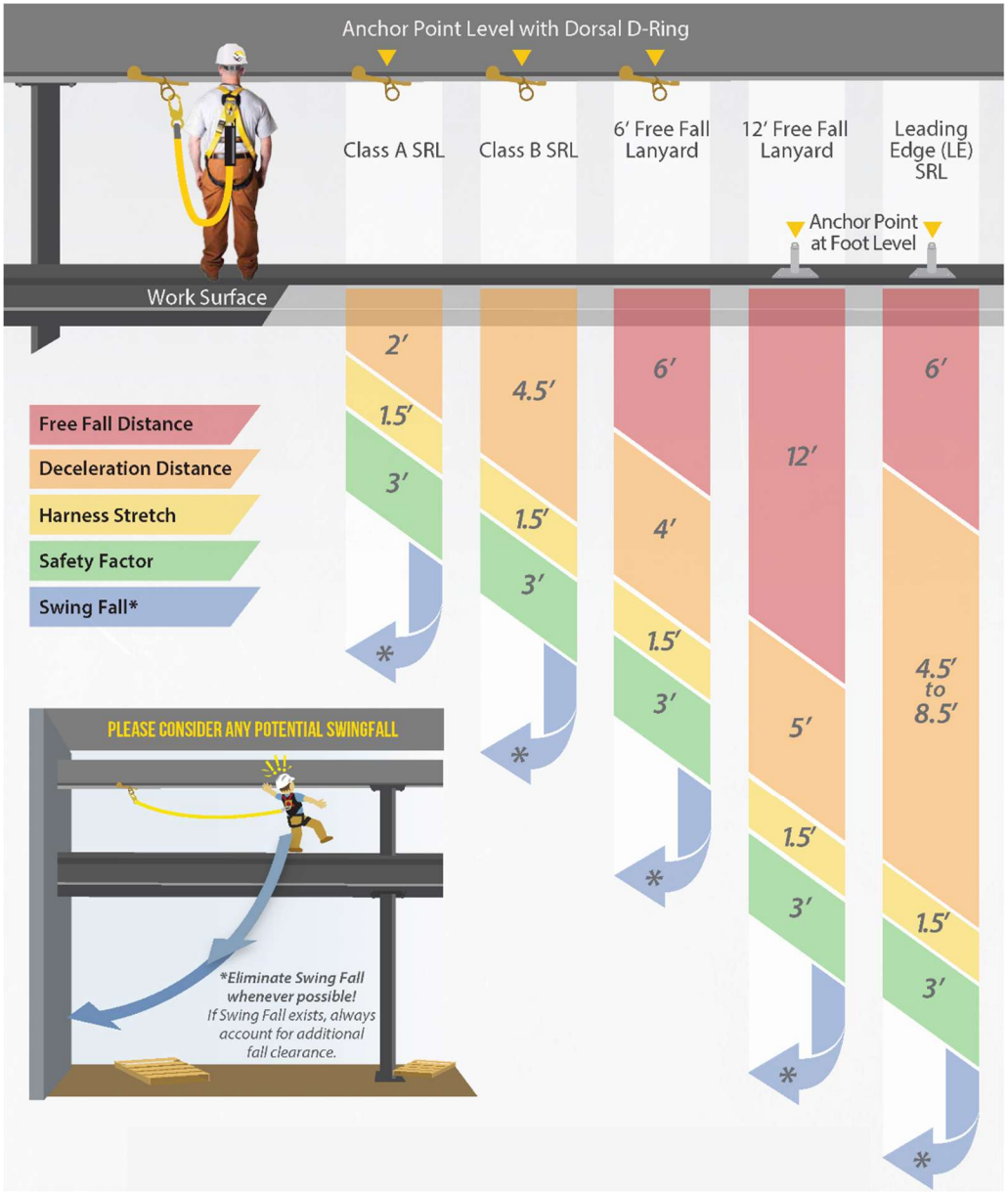
Generally, keep fall protection equipment in the best possible condition. Your life or someone else's life could depend on it!

- Clean webbing and fiber rope by washing with mild soap and water if needed. Stay away from solvents, bleach, or strong detergent that could damage or deteriorate fall equipment.
- Allow equipment to dry before and after it is used. Do not hang items in direct sunlight, microwave, or force dry
- Examine all connectors, D-rings, and slip rings to ensure no cracks, deterioration, excessive wear, or pitting
- Verify keeper latches seat into the latch nose without bending, distortion, or obstruction to ensure proper mechanism latching function
- Support all personal fall arrest, restraint, and positioning devices by connectors for storage, ease of inspection, and preventative wear.
- Prevent storage of any fall equipment in a manner inconsistent with its prescribed function or use

Fall Clearances

With any fall protection and restraint device, knowing spatial constraints is critical to ensure worker safety and fall component(s) operation. Addition of fall protection components can affect stopping distances. Keep worker fall lengths within specifications of the equipment in service. When trying to determine fall clearances, observe the following measurements while setting up fall prevention:

- Height of the person
- Length of the lanyard
- Point of attachment (where the lanyard is placed in reference to the person)
- Deceleration distance of the fall arrest device
- Safety factor distance between the lower level or ground surface and the worker in fall protection
- Swing fall, if present as a fall hazard



Courtesy of Guardian Fall Protection

If employees are working at heights greater than eighteen and half (18.5') feet from a lower lever or base, alternative work procedures must occur. The supervisor or competent person must identify measures that mitigate working at fall distances beyond safe work practices. Minimizing fall potential may include relocation to another anchorage point, or implementation of a lifeline for fall restraint prior to fall arrest. Identification of engineering controls may be implemented for lift equipment, platforms, or scaffolding to increase fall clearances.

Remember, elevated work can require elevated extraction increasing response time and recovery in case of an emergency.

BE aware of anchor point locations! Please, refer to Appendix B, **Anchorage Positioning**. When an anchor is not directly above the supported worker, swing fall hazards are present. Inspect the distance from securement. Potential swing fall for workers impacting secondary surfaces increases with working fall heights if they strike an object below.

Fall clearance calculations shown, are based on worker falling directly in-line with a secure anchor point. Always take into account swing fall and other hazards when calculating fall clearances.

Training

Documentation of Training

Any training for Fall Protection and Restraint shall be documented by the respective department's supervisor and recorded by Environmental Health and Safety (EH&S) for proof of training history. EWU shall verify that all employees are trained for exposure to fall hazards by preparing a written certification record, which contains the name of the employee trained, the training date, and the signature of the person who conducted the training. Risk Management will govern recordkeeping through the EWU Environmental Health and Safety department. Any training records created within departmental toolbox

talks, daily/weekly shop topics, or specific supervisory trainings should be forwarded to EH&S personnel for tracking purposes.

Training Requirements

1) Each EWU employee must be trained by a competent person in the following areas:
   - Nature of fall hazards in the work area and the procedures to minimize these hazards
   - Correct procedures for using, maintaining and inspecting the fall protection systems used
   - Procedures for handling and storing fall protection equipment correctly

2) Each EWU employee shall also be trained to employ and adhere to the fall protection work plan prior to working in locations with fall hazards. The training shall:
   - Identify all fall hazards in the work area
   - Describe the method of fall arrest or fall restraint to be provided
   - Describe the correct procedures for the assembly, maintenance, inspection, and disassembly of the fall protection system to be used
   - Describe the correct procedures for the handling, storage, and securing of tools and materials
   - Describe the method of providing overhead protection for workers who may be in, or pass through the area below the work site
   - Describe the method for prompt, safe removal of injured workers

3) When the supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required to implement the procedures of this document, the supervisor shall require the employee to be retrained.

End of Procedure

Revision History

Rev	Affected Page	Change Descriptions
0	All	Release 7/15/2011
1	All	Reformat, Update 2/9/2015
2	All	Complete rewrite. 6/30/2016
3	13	Add Forms
4	All	Complete re-write and update to online format; update WAC requirements 12/13/17
5	All	Changed out EWU logo 2/14/2023

Appendix A

How To Don A Harness

Hold harness by back D-ring. Shake harness to allow all straps to fall in place.

If chest, leg and/or waist straps are buckled, release straps and unbuckle at this time.

Slip straps over shoulders so **D-ring is located in middle of back between shoulder blades.**

Pull leg strap between legs and connect to opposite end. Repeat with second leg strap. If belted harness, connect waist strap after leg straps.

Connect chest strap and position in midchest area. Tighten to keep shoulder straps taut.

After all straps have been buckled, **tighten all buckles so that harness fits snug but allows full range of movement.** Pass excess strap through loop keepers.

Appendix B

Anchorage Positioning

This chart details allowable working zones required to reduce risk of swing falls and improper side loading. ALWAYS adhere to information specified by chart.

Anchor Distance From Leading Edge (Y)	Working Distance Along Roof Edge (Either Direction) (X)	Working Angle From Perpendicular (Ø)
6′	8′	53°
10′	9′ - 9″	45°
15′	11′ - 7″	38°
20′	13′ - 3″	33°
25′	14′ - 6″	30°
30′	16′	28°
35′	17′ - 2″	26°
40′	18′ - 3″	24°
45′	19′ - 4″	23°
50′	19′ - 10″	21°
55′	21′ - 4″	21°
60′	22′ - 3″	21°

For example, if the anchorage connector is 6′ from the leading edge (Y), the working distance (X) is 8′ in each direction from the perpendicular, which translates to a 53° working angle.