



POLICY: I: 18- Fall Protection  
Policy Review: Annually

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APPROVED: Executive Director of Facilities and Construction:

I. PURPOSE

- A. The purpose of this procedure is to specify procedures and training for the safety of Facilities Management (FM) employees while working on elevated surfaces and ladders. Employees are required to be familiar with JMU's fall protection program. Additionally, those employees working on aerial platforms, powered lifts, or other elevated platform equipment must receive training on the use of such equipment prior to use. Other possible hazards include, but not limited to the following:
1. Excavations
  2. Leading edges
  3. Open-sided floors
  4. Uneven floors
  5. Ramps
  6. Roofs
  7. Skylights
  8. Ladders
  9. Window ledges
  10. Permit required confined spaces

II. DEFINITIONS

- A. Anchorage- A secure point of attachment for lifelines, lanyards or deceleration devices.
- B. Body Harness or Full Body Harness - Straps which may be secured around the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.
- C. Competent person - A person capable of identifying hazardous or dangerous conditions in any personal fall arrest system or any component thereof, as well as in the application and use with related equipment.
- D. Connector - A device, which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. A connector may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system.
- E. Deceleration device- Any mechanism with a maximum length of 3.5 feet, such as a rope grab, rip stitch lanyard, tearing or deforming lanyards, self-retracting lifelines, etc. which serves to

dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an associate during fall arrest.

- F. Energy shock absorber- A device that limits shock-load forces on the body.
- G. Failure- Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.
- H. Hazardous site - A location or other workplace area where an employee hazard exists.
- I. Hole - A gap or void 2 inches or more in its least dimension, in a floor, roof, or other walking/working surface.
- J. Lanyard - A flexible line of rope, wire, or strap, which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline or anchorage.
- K. Leading edge - The edge of a floor, roof or formwork for a floor or other walking/working surface, which changes location as additional floor, roof, decking, or formwork sections are placed, formed or constructed. A leading edge is considered to be an unprotected side and edge during periods when it is not actively and continuously under construction.
- L. Lifeline - A component consisting of a flexible line for connection to an anchorage at one end to hang vertically or for connection to anchorages at both ends to stretch horizontally and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.
- M. Opening - A gap or void 30 inches or more high and 18 inches or more wide, in a wall or partition, through which employees can fall to a lower level.
- N. Personal fall arrest system - A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
- O. Positioning device system - A body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.
- P. Qualified person- A person with a recognized degree or professional certificate and extensive knowledge and experience in the subject field that is capable of design, analysis, evaluation and specifications in the subject work, project, or product.
- Q. Retractable lifeline - A fall arrest device that allows free travel without slack rope, but locks instantly when a fall begins.
- R. Rope grab - A deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.
- S. Safety monitoring system - A safety system in which a competent person is responsible for recognizing and warning associates of fall hazards.

- T. Retracting lifeline/lanyard- A deceleration device containing a drum- wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal associate movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.
- U. 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.
- V. Toe board-A low protective barrier that prevents the fall of materials and equipment to lower levels and provide protection from falls for personnel.
- W. Walking/working surface - Any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform job duties.
- X. Warning line system - A barrier erected on a roof to warn employees they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

### III. RESPONSIBILITIES

- A. Executive Director of Facilities and Construction - Responsible for the overall implementation of this procedure.
- B. Directors, Managers and Supervisors - Responsible for ensuring new and existing employees are familiar with the fall protection program as applicable to the job duties; and arrange required training of employees in fall protection and safe practices of elevating personal platforms.
- C. Risk Management Safety Training Coordinator - Responsible for scheduling training and maintaining documentation.

### IV. PROCEDURE

- A. This procedure describes a systematic approach that must be used to protect and prevent employees from falling. This procedure also lists some of the most common fall hazards and provides recommendations and guidelines for selecting fall arrest systems.
- B. The workplace will be assessed before each assigned job for potential fall hazards by the responsible supervisor.
- C. Department engineers or other competent employees will be provided with any specialized training to recognize fall hazards, to address fall prevention techniques, and to become familiar with fall arrest equipment and procedures.
- D. Contractors are required to have a fall protection program and provide documentation if requested by a project manager.

E. Protective Materials and Hardware.

1. Appropriate fall protection devices that meet OSHA standards will be provided.
2. Fall protection devices will be singularly identified, will be the only device(s) used for controlling falls, will not be used for other purposes, and meets the following requirements:
  - a. Capable of withstanding the environment to which they are exposed for the maximum period of times that exposure is expected.
  - b. Anchor points will not deteriorate when located in corrosive environments such as areas where acid and alkali chemicals are handled and/or stored.
  - c. Capable of withstanding the ultimate load of 5,000 lbs. for the maximum period of time that exposure is expected.
3. When fall hazards cannot be eliminated through any other means, fall arrest systems will be used. Proper training may be requested on the use of fall arrest equipment prior to use by a contractor.
4. Equipment must be inspected prior to use.

F. Inspection and maintenance.

To ensure fall protection systems are ready and able to perform the required tasks, a program of inspection and maintenance will be implemented and maintained by the appropriate shop supervisor. The following as a minimum, will comprise the basic requirements of the inspection and maintenance program:

1. Equipment manufacturer's instructions will be incorporated into the inspection and preventive maintenance procedures.
2. All fall protection equipment will be inspected prior to each use and at intervals not to exceed one (1) year by the supervisor or designee who has been properly trained in this function.
3. Any fall protection equipment subjected to a fall or impact load will be removed from service immediately and destroyed.
4. Check equipment for mold, damage, wear, mildew, or distortion.
5. Hardware should be free of cracks, sharp edges, or burns.
6. Ensure straps are not cut, broken, torn, scraped or frayed.
7. All fall protection equipment and accessories must meet OSHA established standards as appropriate

8. Equipment that is damaged should be tagged as unusable and destroyed.

9. Anchors and mountings will be inspected prior to each use.

#### G. Guardrails and toe boards

Every open-sided floor or platform four (4) feet or more above adjacent floor to ground level must be guarded by a standard railing on all open sides except where there is an entrance to a ramp, stairway, or fixed ladder. Standard guard rails must include midrails and toe boards where there is an open-sided floor/platform and there is potential for an employee to pass or a hazard is presented by machinery.

#### H. Fall Restraint and Arrest Systems

1. Employees performing a task that exposes a potential hazard of falling from a location four (4) feet or more above ground, water surface, or the continuous floor level below must tie off with a harness and lanyard conforming to ANSI standards for full body harness to protect themselves against falls. Some situations where tie off is required are:

- a. Sloping roofs
- b. Flat roofs without handrails within six (6) feet of the edge of the roof or roof opening.
- c. Any suspended platform or stage.
- d. Any scaffold with incomplete handrails or decking.
- e. Ladders near edge of roof and floor openings.
- f. General elevated work without protection to keep one from falling.
- g. Entering pits such as utility lines, sewer, telephone, etc.

#### I. Barricades

1. Barricades are required for excavations, near roof edges, around overhead work, or similar construction type operations and floor openings to warn people against falling in, through, or off.

2. There are two types of barricades:

- a. Warning barricades used to call attention to hazards but offer no real physical protection. Examples are yellow synthetic tape on galvanized stands or post.
- b. Protective barricades used to warn as well as provide physical protection from falling. Examples are rails, cables or wood post and chain.

3. Barricades must be at least 42" high, square, and level.

4. Barricades must be erected at six feet (6) from the edge of the excavation, holes, platforms, and roofs unless protective barricades are used.
5. Barricades must be erected before the hole is cut or opened.
6. Blinking lights and/or flaggers must be used on roadblocks. Blinking lights are essential especially on roadblocks after dark.

J. Holes

1. Many incidents are caused by falling, tripping, or stepping into large or small holes. Holes must be properly closed when not in use or barricaded when in use.
2. An employee or contractor who creates a hole or opening is responsible for having it barricaded.
3. Holes or openings through floors or decking at all elevations must be protected with hole covers or barricades immediately.
4. Hole covers are not to be obstructed at any time.
5. Hole covers must have warning signs informing others of the status and identifying the danger.
6. Warning signs must be physically attached to the hole cover in such a way as to prevent it from shifting to other locations.
7. Hole covers must be constructed with two inches (2") lumber or double 3/4" plywood unless one dimension of the hole is less than eighteen inches (18"), in which case one 3/4" plywood may be used.
8. Employees are not authorized to remove any warning signs on the property unless the danger has been eliminated.

V. TRAINING

- A. A training program will be provided for employees who are exposed to fall hazards in the work area, and will be conducted by competent personnel. The program will include, but not be limited to:
1. A description of fall hazards in the work area.
  2. Procedures for using fall prevention and protection systems.
  3. Equipment limitation.
  4. The elements encompassed in total fall distance.
  5. Prevention, control and fall arrest systems.

6. Inspection and storage procedures for this equipment.
- B. Employees will be trained to recognize the hazards of falling from elevations and to avoid falls from grade level to lower levels through holes or openings in walking/working surfaces. Training programs will include prevention, control and fall arrest systems. It must be ensured that appropriate fall arrest systems are installed, and that employees know how to use them before beginning any work that requires fall protection.
  - C. Initial training- Training will be conducted prior to job assignment. Risk Management staff will provide training to ensure the purpose, function, and proper use of fall protection is understood by employees, and that the knowledge and skills required for the safe application and usage is acquired by employees.
  - D. Additional refresher training will be conducted when a periodic inspection reveals, or when FM staff has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of fall protection equipment or procedures.