

# ***Fall Protection Program***

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## I. Scope

The University's Fall Prevention Program creates policies to be followed whenever an employee works at heights above Six feet. These guidelines were established to provide a safe working environment, and to govern the use of fall protection measures and equipment.

The written procedures outline uniform requirements designed to ensure that fall prevention training, operation, and practices are communicated to, and understood by, the affected employees (an affected employee is one that must work in or around areas where fall hazards are present). Therefore, only trained employees may work in areas where fall hazards are present.

## II. Responsibilities

### A. Risk Management and Safety shall;

1. Develop and maintain the written Fall Prevention Program. Risk Management and Safety will re-evaluate this program periodically and will base the need for changes upon suggestions by employees and their supervisors, accidents and near miss incidents that have been recorded, routine building safety inspections and changes in standards and technology.
2. Provide necessary training, which will primarily consist of elevated platform safety, scaffolding safety, ladder safety and personal fall arrest system safety for those affected employees.
3. Serve the role of technical support and consultation to departments of affected employees to interpret requirements and establish safe practices.

B. University departments shall;

1. Recognize potential fall hazards based on this policy, notifying Risk Management and safety of each fall hazard that their employees may face and to involve their affected employees in this program.
2. Notify Risk Management and Safety of the need for appropriate training, such as ladder safety, scaffolding safety and personal fall arrest system safety.
3. Evaluate, on an annual basis, the effectiveness of the program as it applies to the work that their affected employees perform and to provide Risk Management and Safety with their conclusions, compliance challenges and recommendations.
4. Contact Risk Management and Safety for technical support when questions arise regarding compliance and safe procedures.
5. Ensure that proper safety equipment is supplied to their affected employees where needed, such as fall arrest systems, scaffolding, proper ladders, guard railings, toe kicks, etc.
6. Ensure that their affected employees perform applicable pre-work check lists and inspections and to maintain the records of the completed check lists for at least one year.
7. Ensure that all work places are safe to perform the work that their affected employees are expected to conduct. To prevent slipping, tripping and falling, all locations where fall hazards are present must be kept clean, dry (where possible) and orderly. Where wet processes are used, drainage will be maintained, and false floors, platforms, mats, or other dry standing places are provided where practicable.

C. Affected Employees shall;

1. Follow the program requirements outlined in this policy and standard procedures required by their department for the work activities they are involved with.
2. Notify their supervisor when questions arise surrounding safe procedures, the need for fall prevention equipment, personal protective equipment and difficulties complying with requirements.
3. Attend any fall prevention training that is required of them.

4. Report all accidents and near misses that they witness or incur. This will help the University to improve safe practices.
5. Perform checklist inspections outlined in this written program prior to conducting work activities.

### III. Fall Hazards

There are a number of potential situations or conditions that can present a fall hazard. This policy may not specifically address all possibilities. Therefore, when employees or supervisors recognize a condition that may present a fall hazard not specifically addressed by this written program or the University's Aerial Platform Lift Policy, they shall involve Risk Management and Safety prior to addressing the safety concerns surrounding the condition.

The following list of conditions addressed by this written program (note that this is not an all-inclusive list):

#### A. Ladders, both permanent and temporary (see Appendix A)

Ladders shall exhibit the following conditions:

1. Meet OSHA specifications for design and safety.
2. The appropriate type of ladder is being used for the job.
3. Metal ladders are not used near exposed electrical sources.
4. All parts, ropes, fittings and connections are secure and in good condition.
5. Non-slip surfaces are in place on ladder rungs.
6. Gripping safety feet are in place, secure and in sound condition.
7. Ladder has been set up safely:
  - a) Floor/ground surface is firm.
  - b) Floor/ground surface is flat.
  - c) Floor/ground surface is not slippery.
  - d) Ladder is level.

- e) Top of ladder (unless using step ladder) is against a solid, fixed surface.
- f) For extension ladders, the 4-to-1 principal is accomplished (the base of the ladder should be placed at a distance from the wall that is equal to one fourth of the height that the ladder is extended. Ie; a ladder that is extended 20 ft high should have it's base approximately 5 ft from the wall).
- g) When employees are on extension ladders at heights of 20 feet or higher, either a second person is present to steady the ladders base or the top of the ladder is effectively tied off to a sound anchor point.

B. Stairs (permanent and temporary)

All stairs shall exhibit the following conditions:

1. Meet OSHA specifications for design and safety.
2. All required covers or guardrails are in place, including top rails, midrails and toe kicks or spindles.
3. All hand rails or guardrails are in place.
4. All treads and risers are in good repair.
5. Non-slip surfaces are in place.
6. Adequate headroom is maintained above.
7. Stairs are clear of clutter and slippery materials.

C. Elevated platforms that are fixed

All elevated platform locations shall exhibit the following conditions:

1. Top guard rail in place, is between 36 and 45 inches from floor, is in sound condition and anchored appropriately.
2. Vertical rails (spindles), a solid surface or a mid rail is in place, is in sound condition and is anchored appropriately.
3. If the railing is not solid down to the floor, a toe kick is present, in sound condition and anchored appropriately.
4. The flooring of the platform has no openings, is properly attached to sound surface and is in sound condition.

5. Walking surfaces are clear from obstruction and are not slippery.

D. Scaffolding

Once erected, scaffolding is an elevated platform and shall meet the same safety requirements. However, due to the complexity of parts and connections, and due to the fact that they are routinely assembled and disassembled, they are far more complex and are potentially more dangerous. Therefore, all employees who erect or use scaffolding shall attend the Scaffold Safety Training Program sponsored by Risk Management and Safety prior to working with or on scaffolding.

See section VI of this written program for specific requirements relating to scaffolding.

E. Floor and wall openings

All floor and wall openings that lead to a fall hazard shall exhibit the following conditions:

1. All floor and wall openings are safely covered or blocked from access.
2. If not safely covered or blocked from access, someone is assigned for constant attendance to it.
3. Covers shall be sound, solid and not easily opened.
4. Barricades that are designed to prevent someone from falling into the opening shall be visually noticeable, strong enough to hold the weight of multiple people and shall not, in themselves, have additional openings that create additional fall hazards. If the barricade is not solid from its top rail to the floor, they shall meet the requirements of a guardrail on an elevated platform (top rail, mid rail, toe board).
5. Floor surfaces surrounding the opening shall be clear of clutter or slippery material.

F. Working without a ladder or aerial platform lift at elevations greater than 6 feet in height.

Any time an employee works at elevations higher than 6 feet above the floor they shall use an appropriate ladder, an aerial platform lift, scaffolding or assemble an appropriate elevated platform whenever feasible. If these are not feasible, the employee shall be trained in the proper use of fall arrest systems and don their arrest systems appropriately

throughout the duration of time that they work above 6 feet (see section V).

Some of the above conditions require the use of safety check lists prior to working with/on them. See Appendix A through D for approved checklists. If any of the conditions on the checklist are not met for the area or piece of equipment posing the potential fall hazard, then employees may not perform that work until the condition is safely met. If the condition cannot be remedied, a supervisor or Risk Management and Safety shall be notified of the problem. If the situation calls for the use of fall protection devices, such as harnesses, or positioning and restraining devices (such as belts) then the employee must don such protective equipment before beginning the work and use it as intended throughout the duration of the work. If the employee has not been trained in the safe use of fall arrest systems then he/she may not use the equipment until they have been trained through the University's Fall Arrest System training program sponsored by Risk Management and Safety (see section IV).

#### IV. Training Programs

The Risk Management and Safety Department will sponsor all fall prevention related training programs for University employees who require the need. The individual departments shall notify Risk Management and Safety of the need for training, which will include new hires and existing employees who's job has changed to require such training. All training records will be maintained by Risk Management and Safty.

The following training programs will be provided as needed:

- A. Scaffold Safety: For all employees who erect or use scaffolding.
- B. Fall Arrest System Safety: For all employees who use fall arrest systems.
- C. Ladder Safety training will take place periodically for departments who frequently use ladders.
- D. Note that aerial platform lift training, though not a part of this fall prevention written program, is also provided and mandated for all employees who operate or ride on aerial platform lifts (see Aerial Platform Lift Policy).

## V. Specific requirements regarding personal fall arrest systems

Different types of personal fall arrest systems are chosen depending on the nature of the work and the specific conditions present in the area where the work will take place.

### A. Three basic types of personal fall arrest systems include:

1. Personal Fall Arrest system – A system used to stop a fall once it has begun. This system shall include an anchorage, full body harness, lanyard, locking snaphooks, lifeline and anchorage connector, and it may include a descent control device.
2. Positioning Device System – A system that prevents falls by supporting the employee in a working position. This system supports the employee, therefore, eliminating the chance for a fall to begin. These systems may include a body belt, harness, connector, locking snap hook and proper anchorage.
3. Personal Fall Protection Systems for Climbing Activities – A system that protects the employee while he/she is climbing. This system anchors at a point that usually adjusts and moves with the climber.

### B. Equipment anchorage, tie off and use

Anchoring your fall arrest system is critical. The selection of the anchoring point should be made carefully and when the employee is uncertain about the anchoring point he/she is expected to consult with a supervisor or Risk Management and Safety. Anchoring points must be permanent, fixed objects that are rated to hold forces several times the person's weight, including the weight of the equipment they will have with them. There are other criteria necessary for an adequate anchorage point that shall be covered in training.

When tying off, the employee shall tie off at such a location where there are no obstacles in the potential path of a fall and shall allow no more than 6 feet of free-falling distance (however, 2-4 ft of free falling distance is recommended). In addition to the free falling distance, the employee shall know and account for the additional deceleration distance of the fall arrest system they are using.

The employee shall complete the anchoring tie off and equipment tie off procedures that are specified by the fall arrest system manufacturer PRIOR to getting into a position where he/she could fall.



### C. Body Belts and Harnesses

Only full-body harnesses that are approved by Risk Management and Safety may be used. All equipment manufacturer's procedures shall be met. Harnesses can be attached either in the center of the back at shoulder level or above the head. The employee must use the following procedure to put their full-body harness on:

1. Inspect your full-body harness before putting it on (see part D of this section).
2. Hold the harness by the back D-ring and shake the straps into place.
3. Release buckled straps and slip them over your shoulders with the D-ring in back.
4. Pull the leg strap between your legs and connect it to the opposite end.
5. Waist strap should be tight but not binding.
6. Connect chest strap and position it in the middle of your chest.
7. Check that the harness is snug but allows full movement.

### D. Equipment Care and Inspection

Keeping equipment in good working order is essential. Follow manufacturer's instructions and training protocols for equipment maintenance, cleaning and storage. Employees shall follow the "Personal Fall Arrest System Check List" in Appendix B of this written program prior to each use of their personal fall arrest system. Equipment that has been subject to a fall must be inspected before it is re-used. Note that some personal fall arrest systems need to be discarded after a single fall occurs. Any defective equipment must be identified and replaced at once.

### E. Rescue After a Fall

In the event that a person falls and their fall arrest system engages, call 911. The Notre Dame Fire Department will organize a rescue effort quickly.

## VI. Specific requirements regarding scaffolding

Scaffolds are complex systems with multiple connection points and are subject to a number of factors that could effect their stability and reliability. Therefore, only a competent person (one who has received training sponsored by Risk Management and Safety) may erect and disassemble scaffolding, perform a scaffold equipment inspection (see Appendix C) and perform a scaffold workplace inspection (see Appendix D).

### A. Basic requirements for the safe use of standard scaffold systems

1. The working edge of the scaffold can be no more than 14 inches from the front of the building or structure without additional pre-cautions (see Risk Management and Safety if you need more than 14 inches).
2. Platforms shall extend over the end supports by at least 6 inches and not more than 12 inches unless cleated or restrained by hooks, nails or nine gauge wire.
3. All parts that are supplied by the manufacturer are to be used unless they are parts specifically designed for optional uses which are not being used during the project.
4. All parts, including casters, pipes/poles, rails, toe boards, platforms, cams, locking pins and all connection devices must be inspected and found to be in good condition prior to each use (See Appendix C).
5. A work place inspection shall be conducted prior to and during the erection of the scaffolding (See Appendix D).
6. Guardrails shall be placed between 36 and 45 inches high and placed at the open ends and sides of the platform and must be able to withstand a force of 200 pounds. Mid rails are needed between the top rail and the toe board. Toe boards shall also be in place.
7. Cross bracing and railing shall not be used as a means of climbing to and accessing the platform. Use only installed ladders.
8. Caster wheels shall be locked and all locking pins shall be in place prior to using scaffolding.
9. Fall protection systems are required, when feasible, while employees erect and disassemble scaffolding.
10. Hard hats shall be worn when working on or around scaffolding (see Risk Management and Safety regarding exceptions to this requirement).

11. The area below and around erected scaffolding shall have a barricade.
12. If planning to use a suspended scaffolding system, consult with Risk Management and Safety first.

# Appendix A

## Workplace Inspection For Ladders

The condition of the ladder should be inspected prior to each job that the ladder is used for. The workplace should be inspected at each new location where a ladder is to be used. These are guidelines, therefore documentation is not a requirement.

### Ladder Condition:

- This is the proper ladder for the job
- No cracks in rungs or sides of ladder
- No loose rungs
- Connection hardware is in good condition
- No broken locks or pulleys
- No damage to ladder feet/base
- No frayed or worn ropes
- Frame is not bent, warped or uneven

### Ladder Set up:

#### Extension Ladders

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- Firm Ground
- Firm/proper top resting point
- Top ladder extends 4 rungs above resting point if accessing roof
- Level ladder legs
- No electrical hazards
- No horizontal forces
- Rung locking devices secure
- Area cordoned off (if necessary)
- If 20 ft high, secure top of ladder or have a 2<sup>nd</sup> person to stabilize
- No additional hazards

#### Step Ladders

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- Firm Ground
- Reaches proper height
- No electrical hazards
- No horizontal forces
- Area cordoned off (if necessary)
- No additional hazards

# Appendix B

## Scaffolding Equipment Inspection (Mandatory)

(For tube and coupler scaffolding, rolling towers and stationary towers)

- Frame posts in good condition
- Runner poles in good condition
- Bearer poles in good condition
- Cross bracing poles in good condition
- Horizontal poles in good condition
- Panel guard rails in good condition
  - Top rail
  - Mid rail
  - Uprights
  - Toe kicks
- Connector Clamps
- Locking pins
- Base plates
- Casters with locking equipment
- Climbing Ladders
- Climbing ladder brackets
- Outrigger brackets (if applicable)
- Outriggers (if applicable)
- Planking (solid treated lumber, LVL, Metal...)
- Additional components
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  - 
  -
- Additional accessories added
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Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Department \_\_\_\_\_

Inspector's Name \_\_\_\_\_

Sign Name \_\_\_\_\_

Date/Time \_\_\_\_\_ / \_\_\_\_\_

# Appendix C

## Scaffolding Workplace Inspection (Mandatory)

Date of work and inspection \_\_\_\_\_

Department doing the work \_\_\_\_\_

Name of inspector \_\_\_\_\_

- Is scaffold equipment inspection complete?
- No electrical within 10' (or insulation if <300 V)
- No overhead obstruction
- Scaffold grounded if power equipment is used
- Only trained personnel erecting or using scaffolding
- Ground or floor is providing adequate support
- Ground or floor flat and level or adjustments have been made
- Area around base is cordoned off
- If casters are used, they are locked
- Base plates are in place and secured
- Each frame and panel is braced by
  - Horizontal bracing, or
  - Cross bracing, or
  - Diagonal bracing
- Diagonal and cross bracing is used near bottom and every 20 ft
- All bracing connections and couplers are secured
- All vertical post connections and couplers are secured
- All locking pins and locking mechanisms are in place and engaged
- All posts are plumb and planking is level
- All planking overhangs the ends by 6-12"
- All 4:1 sections (when height exceeds 4 times it's width) properly secured
  - Tied to wall or fixed surface, or
  - Guyed, or
  - Outriggers used, or
  - Other effective restraints used
- A means of access to all platforms is provided (ie; ladder)
- No climbing of cross bracing, horizontal or diagonal parts is necessary
- No homemade or make shift devices used
- No additional ladders or devices used to gain height on platforms
- Erected scaffolding reaches safe working height
- Weight capacity of the scaffold system will not be exceeded

Notes/comments: \_\_\_\_\_  
\_\_\_\_\_

Inspector's signature \_\_\_\_\_ Date \_\_\_\_\_

# Appendix D

## Fall Arrest System Checklist

The following checklist should be completed prior to conducting work using a fall arrest system. This is a guideline checklist that is required, however documentation is not mandatory. In addition to these items, be sure to inspect any other items that the fall arrest system's manufacturer recommends.

- Check all equipment for:
  - Wear
  - Damage
  - Mold
  - Distortion
  - Cuts
  - Scrapes
- Check hardware for:
  - Cracks
  - Sharp edges
  - Burrs
  - Worn or bent parts
- Do snap hooks close and lock tightly?
- Do buckles work properly?
- Check ropes for worn or broken fibers, pulled stitches and discoloration
- Make sure lifeline anchors and mountings are not loose or damaged
- Check additional manufacturer's recommendations
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