

1.0 Overview

A fall from a standard working height can exert thousands of pounds of force on an individual. **The impact from a fall can have serious and often fatal consequences.** Environmental Health and Safety (EHS) at Weill Cornell Medicine (WCM) has developed this Fall Protection Program to promote a safe work environment for anyone working at heights at WCM.

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3.0 Objectives

This program aims to prevent exposure to fall hazards and ensure compliance with applicable regulatory requirements. It is designed to guide and protect the WCM community from fall hazards and ensure that any work performed at heights is done safely by workers who are appropriately trained and provided with safe work procedures, personal protective equipment, and other safety controls.

4.0 Applicability

The Fall Protection program applies to anyone who may be working at heights at WCM, including all students, employees, and volunteers working in laboratory, clinical, and administrative/service work environments. Working at heights involves any work that would present a potential fall of greater than four feet.

This program does not apply to construction work at WCM. All construction work must meet applicable OSHA and regulatory guidelines and is governed by the WCM EHS Contractor Safety Program.

5.0 Responsibilities

5.1 ENVIRONMENTAL HEALTH AND SAFETY (EHS)

EHS duties include:

- Assist the WCM community in the implementation of this program.
- Provide or coordinate general training for groups on the content of this program, as requested.
- Conduct or assist in training for competent persons.
- Retain all training records.
- Review and update this written program periodically.
- Evaluate work being performed and determine compliance with this program.
- Evaluate the overall effectiveness of this program periodically.
- Investigate any accidents or incidents involving falls from heights, including falls by contractors working in WCM buildings.

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5.2 ENGINEERING AND MAINTENANCE (E&M)

E&M duties include:

- Assist employees in the implementation of safe work practices addressed in this program.
- Ensure that all employees comply with ALL provisions of the Fall Protection Program.
- Designate Competent Persons for Fall Protection and ensure they receive the proper training.
- Confirm that employees receive training appropriate to their assigned tasks.
- Verify that employees receive, inspect, and use appropriate protective equipment.

5.3 DEPARTMENTS WITH EMPLOYEES WHO WORK FROM HEIGHTS

Departments and Supervisors with employees who work from heights are required to:

- Assist employees in the implementation of safe work practices addressed in this program.
- Verify that all employees comply with ALL provisions of the Fall Protection Program.
- Designate Competent Persons for Fall Protection and ensure they receive the appropriate training.
- Confirm that employees receive training appropriate to their assigned tasks.
- Ensure that employees receive, inspect, and use appropriate protective equipment.

5.4 CONTRACTORS

Contractors' duties include:

- Have a fall protection plan in place, where applicable, and provide it to EHS upon request and before the start of work involving work from heights.
- Provide appropriate fall protection for work where required.
- Communicate with EHS and project supervisors regarding fall protection requirements.
- Review the EHS Contractor Safety Manual and adhere to its requirements, as well as the requirements of other applicable EHS manuals.
- Provide employees with appropriate training for their assigned tasks.
- Verify that employees receive, inspect, and use appropriate protective equipment.
- Communicate with EHS regarding any incidents or accidents that occur while working on WCM projects.

5.5 PROGRAMMATIC ROLES

This Fall Protection program also designates programmatic roles for teams of WCM employees or contractors whose work involves exposure to potential fall hazards. These roles have specific responsibilities associated with fall protection.

This section details the responsibilities associated with each of these roles.

5.5.1 Worker

- Comply with the Fall Protection Program.
- Complete all fall protection training as required.
- Request further instruction if unclear or unsure how to properly use fall protection devices.
- Conduct assigned tasks in a safe manner.
- Wear appropriate personal protective equipment (PPE) when required.
- Report any unsafe work conditions, faulty PPE or equipment, and/or any job-related injuries to their supervisor immediately.

5.5.2 Competent Person

- Have the experience and knowledge necessary to recognize and mitigate fall hazards.
- Correct all unsafe conditions as soon as feasibly possible.
- Train employees in the proper use of fall protection.
- Audit work areas regularly to ensure appropriate use and condition of fall protection equipment.
- Shut down work until hazardous conditions are corrected.
- Take damaged fall protection equipment out of service and replace it with functioning equipment.

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5.5.3 Qualified Person

- Maintain professional certifications in accordance with regulatory requirements.
- Have experience in adhering to applicable regulations.
- Design all fall protection systems in accordance with regulatory requirements.
- Test all fall protection systems (such as anchorages) as mandated by regulatory and accepted consensus standards.
- Produce appropriate regulatory-required documentation for all new fall protection installations.

6.0 Fall Hazard Identification

6.1 FALL HAZARD RECOGNITION

Any working height greater than 4 feet is considered a fall hazard, and employees must be protected. (For construction, the height is 6 feet).

Potential fall hazards include, but are not limited to:

- Roofs
- Floor Openings
- Shafts
- Catwalks
- Work Platforms
- Pits

6.2 HAZARD EVALUATION

This program has been designed to evaluate potential fall hazards through a logical hazard assessment process. When a work task or work area presents a potential fall hazard, the supervisor or competent person must evaluate these potential hazards to determine which of the following courses of action can be taken in each situation.

1. **Elimination of Fall Hazards:** Fall hazard elimination is the first choice when presented with a fall hazard. The elimination of a fall hazard requires an assessment of the work to be performed to determine if work does not need to be conducted from heights.
2. **Prevention of Fall Hazards:** Fall hazard prevention is utilized when a fall hazard cannot be eliminated from a workplace or a work task. Prevention involves making changes to the workplace or worker's behavior to prevent falls. Fall hazard prevention involves the use of stairs, guardrails, work platforms, or other means of passive fall protection. It also includes the use of A-Frame ladders, man lifts, scissor lifts, or other lifts which provide a steady, guarded work platform and reduce potential fall distances or unguarded hazards.
3. **Control of Fall Hazards:** Control of fall hazards may only be used after it has been determined that a specific hazard cannot be eliminated or prevented. Control must be the last choice in addressing fall hazards. Fall hazard control is accomplished through the use of appropriate fall protection equipment. This equipment, used to control the risk of a fall as well as limit fall distance and the forces associated with a fall, may include one or more of the following: full body harnesses, lanyards, fall arrest systems, lifelines, and anchorage points. Controlling fall hazards requires significant planning and training to be implemented correctly.

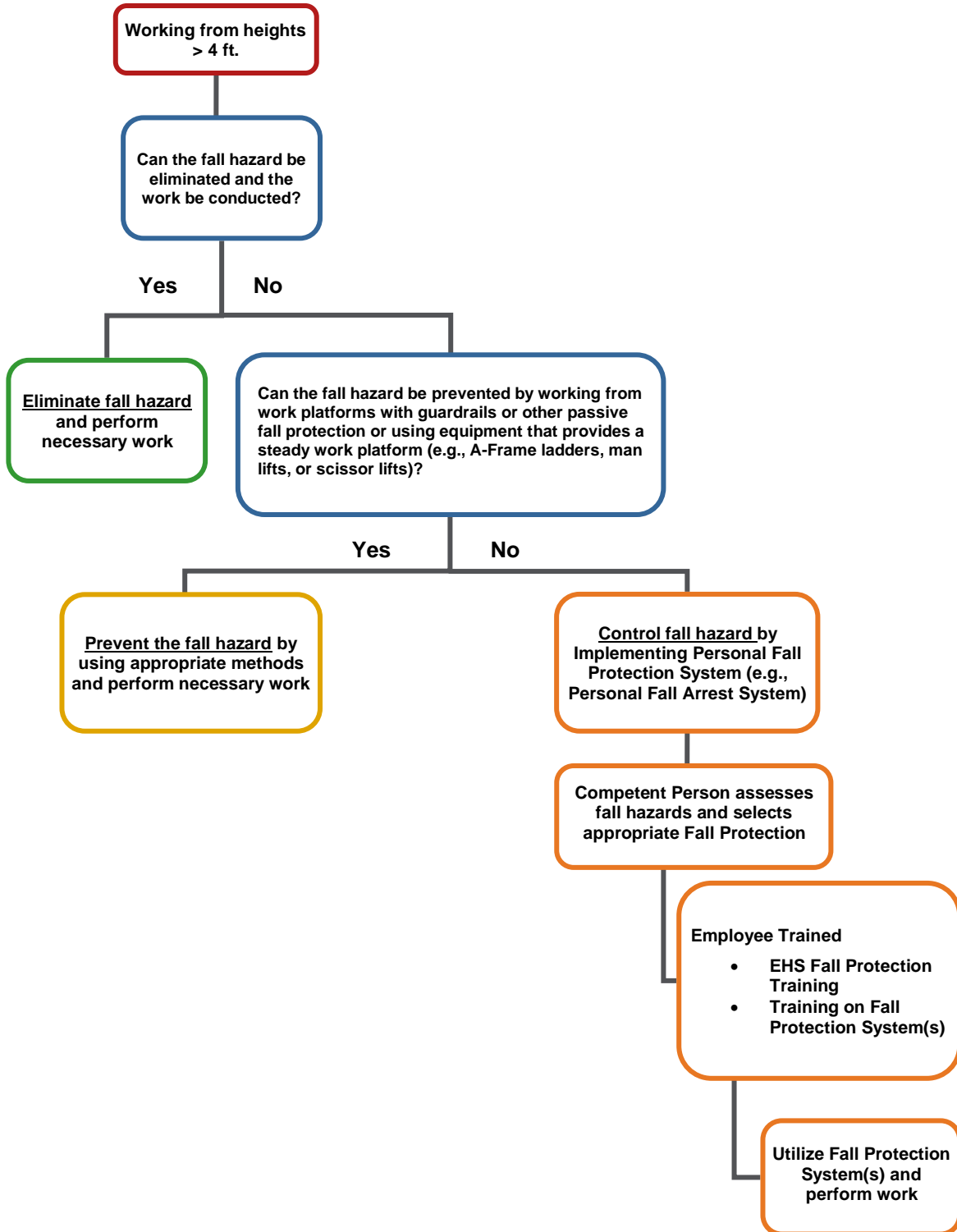
A Competent Person must assess all fall hazards before employees are permitted to work. The Competent Person must review fall protection to ensure it is appropriate for the work being done, and that it is set up and installed properly.

The Competent Person can use the flow chart on the following page to assess fall hazards.

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6.2.1 Fall Hazard Flow Chart



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7.0 Walking and Working Surfaces

7.1 GUARDRAILS

7.1.1 Requirements for Guardrail Systems

All guardrail systems must meet the following criteria:

- The top rail or top of the guardrail system must be 42 inches (plus or minus 3 inches) above the walking/working surface.
- Midrails or intermediate rails must be installed at a height midway between the top edge of the top rail and the walking/working surface, unless there is a wall or parapet wall at least 21 inches high located between the top rail and the working surface.
- A toe board must be installed at the walking/working surface (floor, platform, ramp, etc.) and must extend at least 4 inches in height above the surface.
- All parts of the guardrail system must be capable of withstanding a force of at least 200 pounds applied within two inches of the top edge, in any outward or downward direction at any point along the top edge.

7.1.2 Inspections and Addressing Deficiencies

- Workers must visually inspect guardrail systems any time they walk or work in areas protected by them.
- Any deficiencies found in guardrail systems must be reported to a Competent Person and/or E&M Supervisor immediately. Signs and/or danger tape must be affixed to these systems and access points to the space immediately. Employees must be prohibited from accessing or working from these areas without additional fall protection systems (e.g., Personal Fall Arrest Systems) until necessary repairs are made.

8.0 Skylights

8.1 REQUIREMENTS FOR SKYLIGHT GUARDING

A skylight is not considered a walking/working surface and should be treated as a hole or fall hazard. Skylights on all roofs that will be accessed must be protected by adequate fall protection using one or more of the following methods:

- Installation of a fixed guardrail system around the skylight, meeting the requirements stated in [Section 7.0](#).
- Installation of a screen over the skylight. The screen must be capable of withstanding a load of at least 200 pounds applied perpendicularly at any one area on the screen.
- Constructing the skylight of plastic that is able to support the 200-pound load as described above.

9.0 Personal Fall Arrest Systems Requirements

A Personal Fall Arrest System (PFAS) consists of a full-body harness, lanyard, connectors, and anchorage. This system may also include deceleration devices, a self-retracting lifeline, or a combination of devices.

A Personal Fall Arrest System must meet the following general requirements:

- The system must meet or exceed all requirements of applicable American National Standards Institute (ANSI) Fall Protection standards and have the ANSI-compliant labeling.
- It must be set up so that an employee cannot free fall more than 6-feet or make contact with any lower level.
- It must limit the maximum arresting force on an employee to 1,800 pounds.
- It must be set up so that each employee is attached to a separate lifeline or lanyard.

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9.1 LANYARDS

Lanyards must meet the following minimum requirements when used as part of a fall arrest system:

- The lanyard must meet or exceed all requirements of applicable ANSI standards.
- It must have a minimum breaking strength of 5,000 pounds.
- It must be equipped with an approved shock absorber.
- It must be attached to an approved engineered anchorage point.
- It must be free from knots.
- It must be protected against cuts or abrasions.
- It may not be wrapped around an anchorage and connected to itself.
- Lanyards must be inspected before every use and as required by manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately. An “Out of Service” tag must be placed on the equipment in accordance with the [EHS Accident Prevention Tag Update](#).



9.2 LIFELINES

The following minimum requirements must be met for all lifelines (self-retracting, vertical, horizontal, etc.):

- The lifeline must attach to an appropriate engineered anchorage point.
- The lifeline must be set up in a way that prevents the individual from becoming entangled in it.
- It must not be exposed to corrosive materials, acids, caustics, or excessive heat.
- Self-retracting lifelines must attach to the back “D” ring of a harness.
- Self-retracting lifelines may not be lengthened by attaching lanyards or other components.
- Lifelines must be inspected before every use and as required by manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately. An “Out of Service” tag must be placed on the equipment in accordance with the [EHS Accident Prevention Tag Update](#).



9.3 ANCHORAGE POINTS

The following minimum requirements must be met for all anchorage points:

- The anchorage point must be independent of any anchorage being used to support or suspend platforms and serve no other function unless rated to do so.
- It must be capable of supporting at least 5,000 pounds per employee.
- It must be engineered and designed specifically as anchorage for a Personal Fall Arrest System.
- It must be designed and installed by a Qualified Person.
- The competent person must maintain documentation displaying the rating and installation details for all anchorage points.
- Anchorage points must be inspected before every use and as required by manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately. An “Out of Service” tag must be placed on the equipment in accordance with the [EHS Accident Prevention Tag Update](#).
- Material rigging equipment may not be used as anchorage points.

9.4 FALL PROTECTION HARNESSSES

The following minimum requirements must be met for all fall protection harnesses.

- Full-body harnesses must be used for fall protection. The use of body belts is prohibited.
- Harnesses must be approved by the National Institute for Occupational Safety and Health (NIOSH).
- Harnesses may only be used for employee protection and may not be used to hoist materials.
- Harnesses must be inspected before every use and as required by manufacturer recommendations. Any damaged or defective equipment must be removed from service immediately. An “Out of Service” tag must be placed on the equipment in accordance with the EHS Accident Prevention Tag Update.

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10.0 Ladders

10.1 GENERAL GUIDELINES FOR LADDER SETUP AND SELECTION

The following requirements must be met when choosing and installing a ladder:

- Inspect all ladders for structural integrity before use. Discard, tag, or professionally repair all broken ladders before use, and ensure all ladders that are not structurally sound are removed from service.
- All ladders must have parallel and uniformly spaced rungs free of any slip hazards, cracks, or other structural deficiencies.
- Foldout ladders must have a functional metal spreader or a locking device to hold the ladder open. This mechanism must be fully engaged when in use.
- The ladder must be placed on a level and stable surface when in use.
- Ladders must be secured or blocked off when placed in high traffic areas (doorways, active passageways, driveways, active construction sites, etc.).

10.2 A-FRAME LADDERS

The following requirements must be met when working with an A-frame ladder:

- The ladder must be high enough so that the user is never required to stand on the top two rungs or stand with their feet closer than 2 feet from the top of the ladder. For instance, if the individual is working at the height of 8 feet, a 5-foot (or more) step ladder may be used at the correct height.
- Inspect all ladders for structural integrity before use. Discard, tag, or professionally repair all broken ladders before use.
- Always maintain three points of contact with the ladder or a stable surface at all times.
- Always face forward and have at least one hand grasped on the ladder when climbing up or down.
- Keep ladders free of oils, grease, and other slipping hazards.
- Do not shift, move, or extend a ladder while in use.
- Do not load the ladder beyond the maximum intended load or the manufacturer's rated capacity.



Note: All step ladders must meet the requirements of this section on A-Frame ladders.

10.3 EXTENSION LADDERS

The following requirements must be met when working with an extension ladder:

- The user is never allowed to stand on the top 3 rungs or stand with their feet closer than 3 feet from the top of the ladder. This means that a typical worker must have an effective working height 2 feet above the top of the extension ladder. Users should ensure that the ladder is tall enough for this to be possible.
- Inspect all ladders for structural integrity before use. Discard, tag, or professionally repair all broken ladders before use, and do not use a ladder that is not structurally sound.
- Maintain three points of contact with the ladder or a stable surface at all times.
- Never fasten two ladders together to provide a longer section unless both ladders are specifically designed to do so, and the connections are secure and locked.
- Portable non-self-supporting ladders use the four to one rule. For every 4 feet of height, the ladder must move out 1 foot from the wall.
- Always face forward and have at least one hand grasped on the ladder when climbing up or down.
- Keep ladders free of oils, grease, and other slipping hazards.
- Do not shift, move, or extend a ladder while in use.
- Do not load a ladder beyond the maximum intended load or the manufacturer's rated capacity.



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10.4 FIXED LADDERS, SHIP LADDERS, AND STAIRS

The following requirements must be met when working with fixed ladders, ship ladders, and stairs:

- Inspect all ladders for structural integrity before use. Discard, tag, or professionally repair all broken ladders before use.
- Always maintain three points of contact with the ladder or a stable surface at all times.
- Always face forward and have at least one hand grasped on the ladder when climbing up or down (including when descending ship ladders).
- Keep ladders free of oils, grease, and other slipping hazards.
- Newly installed or replaced fixed ladders greater than 24 feet in height must be used with a personal fall arrest system or a ladder safety system. Cages will no longer be considered adequate fall protection for newly installed ladders by 2036, although they are sufficient for existing fixed ladders.



11.0 Scaffolds

11.1 SCAFFOLD SELECTION

The proper scaffold must be selected for the task by the Competent Person based on the type of work to be conducted and the working load to be supported.

- Light-duty scaffolds are intended for workers and tools only. The scaffold must support a working load of 25 pounds per square foot.
- Medium-duty scaffolds are intended for workers, tools, and construction materials. The scaffold must support a working load of 50 pounds per square foot.
- Heavy-duty scaffolds are intended for workers, tools, stored materials, and construction materials. The scaffold must support a working load of 75 pounds per square foot.
- All scaffolds must be capable of supporting at least four times the design load.

11.2 GENERAL REQUIREMENTS

- Fall protection is required for all scaffolds used 6 feet or more above a lower level.**
- The space between adjacent units of scaffolds, or between the platform and uprights, shall be no more than one inch wide, unless it is demonstrated that a wider space is absolutely necessary.
- All scaffolds used where work is conducted at more than 6 feet in height must have 4-inch toe boards.
- A scaffold shall not be moved while someone is on it.
- Follow all manufacturer's guidelines and special warnings if the scaffold is commercially produced.
- The maximum work level height shall not exceed 4 times the least base dimension of the scaffold. Example: a four-foot by six-foot scaffold cannot exceed sixteen feet in height at the work platform level.
- The minimum working platform width is two feet.
- The supporting structure for the scaffold must have rigid braces, using adequate cross bracing or diagonal bracing with rigid platforms at each work level. Each platform, when abutted to create a long platform, must have independent support. Overlapping of individual platforms to extend the platform length may only occur over supports.
- Working platforms should have a non-slip surface.
- Scaffolds may only be used on an even and stable surface.
- The platform surface must be kept clear of extraneous tools and materials.
- The work level platform shall be wood, aluminum, plywood planking, steel, or expanded metal for the full width of the scaffold, except for necessary protected openings.
- Platforms may not extend more than 18 inches over their support at the ends.
- The distance between scaffolds and electrical power lines must be the minimum specified by [29 CFR 1926.451 paragraph \(f\)\(6\)](#), unless necessary to perform work. If scaffolds need to be closer to the lines, the utility company must be notified and must either de-energize, relocate, or provide additional protective coverings for the lines.
- Access to scaffolds must be via OSHA-approved ladders or ramps. Cross braces may not be used as a means of access.

For requirements regarding suspension scaffolds or other specialized scaffold systems, consult [29 CFR Subpart L 1926.451 – General Requirements, or 1926.452](#) – Additional requirements applicable to specific types of scaffolds.

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11.3 INSPECTIONS AND MAINTENANCE

An inspection must be conducted prior to the use of any scaffold and then daily before and during scaffold use.

- Carefully examine the scaffold for broken or missing cross bracing, broken supporting structure, working platform, and other damaged parts. In addition, all walking and working surfaces must be free of grease, oil, paint, or other slippery substances.
- The scaffold should be equipped with positive wheel-lock casters that are secured in place, if applicable.
- The joint between the working platform and supporting structure must be tight, and all hardware and fittings should be attached firmly. Movable parts should operate freely without binding or undue play.
- All wood parts must be free of sharp edges and splinters. Visually inspect the scaffold to be free of shakes, warping, decay, or other irregularities. Metal parts must be free of sharp edges, burrs, corrosion, or other evidence of structural weakening or damage. Inspect for dents or bends in supporting structure, cross braces, and walking/working surfaces.
- Check all working platform-to-support structure connections, hardware connections, and rivets. If a scaffold tips over, inspect the scaffold for damage before reinstalling the scaffold and continuing work.
- Damaged scaffolds must be withdrawn from service and either repaired or destroyed. When a defect or unsafe condition is found, personnel shall clearly tag or mark the scaffold so that it will not be used until corrective action is taken.
- Defective or unsafe situations shall be reported to the supervisor. Field repairs and the fabrication of improvised scaffolds are prohibited.

12.0 Aerial Lifts

12.1 GENERAL SAFE WORK PRACTICES

The following requirements must be met when working with aerial lifts:

- All aerial lifts are subject to the requirements of the American National Standards Institute (ANSI) A92.2-1969, "Vehicle Mounted Elevating and Rotating Work Platforms."
- Operators shall not wear any loose clothing or any accessory that can catch in moving parts.
- Before the machine is started, the operator must walk completely around the machine to ensure the vertical and horizontal path of the machine is completely clear.
- Prior to using aerial/scissor lifts, lift controls must be tested to ensure they are in safe working condition.
- Modifications and additions that may affect the capacity or safe operation of an aerial/scissor lift are strictly prohibited without the manufacturer's written approval. Capacity, operation, and maintenance instruction markings will be changed as necessary if the manufacturer approves a modification.
- The insulated portion (if applicable) of an aerial/scissor lift shall not be altered in any manner that might reduce its insulating value.
- Any signs, plates, or decals that are missing or illegible must be replaced.
- If the aerial/scissor lift becomes disabled or is found to be in a condition rendering it unsafe to use, an "Out of Service" tag or equivalent shall be attached to the controls inside the platform in a conspicuous location.
- Aerial/scissor lifts with reported deficiencies shall not be operated until repairs are made and the equipment is authorized for use by EHS.
- Operators must report all accidents, regardless of fault and severity, to their Supervisor.

12.2 INSPECTIONS

Prior to the operation of an aerial lift, an inspection of the lift must be completed. This should be done at the beginning of every work period and whenever a new equipment operator takes control of the aerial lift. Any safety defects (such as, but not limited to, hydraulic fluid leaks; defective brakes, steering, lights, or horn; or missing fire extinguisher, lights, seat belt, or back-up alarm) must be reported for immediate repair. An "Out of Service" tag must be placed on the equipment as detailed in the [EHS Accident Prevention Tag Update](#).

Manufacturers require regular inspections of lifts by a Qualified Person. Ensure all lift inspections are conducted in the required timeframe and by a Qualified Person. If a lift is found to be out of compliance, it must be placed out of service until required repairs and associated inspections are completed.

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12.3 LIFT SET-UP

- Wind conditions must be considered before setting up the lift. Follow the manufacturer’s instructions regarding operation in windy conditions. As a general rule, aerial lifts shall not be operated in winds exceeding 25 mph, although this can vary depending on the equipment model:
 - At 20 mph wind speeds or anticipated gusts, lifts will be lowered to a maximum height of 20 feet.
 - At 25 mph wind speeds or anticipated gusts, lifts will be grounded.
 - If staff feels unsafe in lifts at any time, they may make the decision, without penalty, to ground the lift and review conditions with their supervisor.
- Guardrails must be installed, and access gates or openings must be closed and secured before raising the platform.
- Platform load limits specified by the manufacturer shall not be exceeded.
- Consideration shall be given to the protection of bystanders via barricading, having another employee keep bystanders at a safe distance, or other means.
- Aerial lifts must be operated from stable surfaces, and shall not be operated from trucks, scaffolds, or any other non-permanent structure.

13.0 Training

13.1 ANNUAL TRAINING

Annual training is required for all employees potentially exposed to fall hazards as part of their normal work activities. The training will detail the recognition of hazards, appropriate controls, and fall protection equipment.

13.2 EQUIPMENT-SPECIFIC TRAINING

All employees working with personal fall arrest systems are required to have training on the specific system in use in their work area before they begin work with this system. A Competent Person must provide this equipment-specific training.

13.3 AERIAL LIFT TRAINING

All employees working with or potentially working with aerial or scissor lift systems as part of their normal work activities are required to have annual training on the specific equipment in use. A Qualified Person must provide this equipment-specific training.

13.3.1 Initial Operator Training

Before operating an aerial lift at WCM, prospective operators must pass a two-part training session. The initial portion of the training reviews safe work practices, hazards of working from and operating lifts, and safe operation for each model lift that the operator will use. The second portion of the training involves a practical review of lift controls and operations, and a test to ensure the operator is competent in using the lift.

If new equipment is deployed in the work area, training for the operation of the new equipment must be given to employees using that equipment.

13.3.2 Refresher Training

All aerial lift operators must attend annual refresher training. This training will review safe work practices and the hazards associated with working from and operating aerial lifts.

13.3.3 Aerial Lift Training Records

Training records for aerial lift operators will be distributed to supervisors following the completion of training. Supervisors must review these records before allowing an employee to operate a lift.

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13.4 COMPETENT PERSON TRAINING

An annual Competent Person training is required for all employees fulfilling the role of Competent Person for fall protection.

The training must include, but is not limited to, the following topics:

- The nature of fall hazards in the work area.
- The correct procedure for set-up, maintenance, disassembling, and inspecting the use of fall protection systems.
- The use and operation of guardrail systems, personal fall protection systems, and other protection used on campus.
- The correct procedures for the handling and storage of equipment and material, and the erection of overhead protection.
- The role of employees in this Fall Protection Program.
- The appropriate OSHA standards.

14.0 Record Retention, Availability, and Revisions

14.1 EQUIPMENT INSTALLATION, TESTING, AND INSPECTION RECORDS

Competent Persons must maintain records associated with all personal fall arrest systems and equipment. This includes all installation documentation, testing, and inspection records. All required records must be available for review upon request.

14.2 TRAINING RECORDS

EHS will maintain all training records for the annual fall protection training. The individual departments must maintain all other training records. All training records must be available for review upon request.

14.3 REVISIONS

EHS will conduct an annual review of the Fall Protection Program. Program revisions will be made if any deficiencies are identified during the annual review. Any deficiencies brought to the attention of EHS will be reviewed, and the necessary changes will be implemented in a timely fashion.

15.0 Definitions

- **Anchorage:** a secure point of attachment for equipment such as lifelines, lanyards, deceleration devices, and rope descent systems.
- **Arresting Force:** the amount of force that the fall protection system and the person attached to the system will experience as generated by the deceleration device.
- **Authorized:** employee who the employer assigns to perform a specific type of duty or allows in a specific location or area.
- **Cage:** an enclosure mounted on the side rails of a fixed ladder or fastened to a structure behind the fixed ladder that is designed to surround the climbing space of the ladder. A cage also is called a "cage guard" or "basket guard."
- **Carrier:** the track of a ladder safety system that consists of a flexible cable or rigid rail attached to the fixed ladder or immediately adjacent to it.
- **Combination ladder:** a portable ladder that can be used as a stepladder, extension ladder, trestle ladder, or stairway ladder. The components of a combination ladder also may be used separately as a single ladder.
- **Equivalent:** alternative designs, equipment, materials, or methods that the employer can demonstrate will provide an equal or greater degree of safety for employees compared to the designs, equipment, materials, or methods specified in this subpart.
- **Extension ladder:** a non-self-supporting portable ladder that is adjustable in length.
- **Failure:** a load refusal, breakage, or separation of component parts. A load refusal is a point at which the ultimate strength of a component or object is exceeded.
- **Fall hazard:** any condition on a walking-working surface that exposes an employee to a risk of harm from a fall on the same level or to a lower level.
- **Fall protection:** any equipment, device, or system that prevents an employee from falling from an elevation or mitigates the effect of such a fall.
- **Fixed ladder:** a ladder with rails or individual rungs that are permanently attached to a structure, building, or equipment. Fixed ladders include individual-rung ladders, but not ship stairs, step bolts, or manhole steps.
- **Guardrail system:** a barrier erected along an unprotected or exposed side, edge, or other walking/working surface areas to prevent employees from falling to a lower level.
- **Handrail:** a rail used to provide employees with a handhold for support.
- **Hoist area:** any elevated access opening to a walking-working surface through which equipment or materials are loaded or received.

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- **Hole:** a gap or open space in a floor, roof, horizontal walking-working surface, or similar surface that is at least 2 inches (5 cm) in its least dimension.
- **Individual-rung ladder:** a ladder that has rungs individually attached to a building or structure. An individual-rung ladder does not include manhole steps.
- **Ladder:** a device with rungs, steps, or cleats used to gain access to a different elevation.
- **Ladder safety system:** a system designed to eliminate or reduce the possibility of falling from a ladder. A ladder safety system usually consists of a carrier, safety sleeve, lanyard, connectors, and body harness. Cages and wells are not ladder safety systems.
- **Lower level:** a surface or area to which an employee could fall. Such surfaces or areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, equipment, and similar surfaces and structures, or portions thereof.
- **Maximum intended load:** the total load (weight and force) of all employees, equipment, vehicles, tools, materials, and other loads the employer reasonably anticipates to be applied to a walking-working surface at any one time.
- **Mobile:** manually propelled or moveable.
- **Opening:** a gap or open space in a wall, partition, vertical walking/working surface, or similar surface that is at least 30 inches (76 cm) high and at least 18 inches (46 cm) wide, through which an employee can fall to a lower level.
- **Personal fall arrest system:** a system used to arrest an employee in a fall from a walking-working surface. It consists of a body harness, anchorage, and connector. The means of connection may include a lanyard, deceleration device, lifeline, or a suitable combination of these items.
- **Personal fall protection system:** a system (including all components) an employer uses to provide protection from falling or safely arrest an employee's fall if one occurs. Examples of personal fall protection systems include personal fall arrest systems, positioning systems, and travel restraint systems.
- **Platform:** a walking-working surface that is elevated above the surrounding area.
- **Portable ladder:** a ladder that can readily be moved or carried, and usually consists of side rails joined at intervals by steps, rungs, or cleats.
- **Positioning system (work-positioning system):** a system of equipment and connectors that, when used with a body harness or body belt, allows an employee to be supported on an elevated vertical surface, such as a wall or windowsill, and work with both hands-free. Positioning systems also are called "positioning system devices" and "work-positioning equipment."
- **Qualified:** a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.
- **Rung, step, or cleat:** the crosspiece of a ladder on which an employee steps to climb up and down.
- **Scaffold:** any temporary elevated or suspended platform and its supporting structure, including anchorage points, used to support employees, equipment, materials, and other items. For purposes of this subpart, a scaffold does not include a crane-suspended or derrick-suspended personnel platform or a rope descent system.
- **Ship stair (ship ladder):** a stairway that is equipped with treads, stair rails, and open risers, and has a slope that is between 50 and 70 degrees from the horizontal.
- **Side-step ladder:** a type of fixed ladder that requires an employee to step sideways from it to reach a walking-working surface, such as a landing.
- **Stepladder:** a self-supporting, portable ladder that has a fixed height, flat steps, and a hinged back.
- **Step stool:** a self-supporting, portable ladder that has flat steps and side rails. For purposes of the final rule, the stepstool includes only those ladders that have a fixed height, do not have a pail shelf, and do not exceed 32 inches (81 cm) in overall height to the top cap, although side rails may extend above the top cap. A stepstool is designed so an employee can climb and stand on all of the steps and the top cap.
- **Through ladder:** a type of fixed ladder that allows the employee to step through the side rails at the top of the ladder to reach a walking-working surface, such as a landing.
- **Tieback:** an attachment between an anchorage (e.g., structural member) and a supporting device (e.g., parapet clamp or cornice hook).
- **Toeboard:** a low protective barrier that is designed to prevent materials, tools, and equipment from falling to a lower level, and protect employees from falling.
- **Travel restraint system:** a combination of an anchorage, anchorage connector, lanyard (or other means of connection), and body support that an employer uses to eliminate the possibility of an employee going over the edge of a walking-working surface.
- **Warning line:** a barrier erected to warn employees that they are approaching an unprotected side or edge, and which designates an area in which work may take place without the use of other means of fall protection.

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16.0 References

- [Occupational Safety and Health Administration \(29 CFR 1910 Subpart D – Walking and Working Surfaces\)](#)
- [Occupational Safety and Health Administration \(29 CFR 1910 Subpart F – Powered Platforms, Manlifts, and Vehicle-Mounted Platforms\)](#)
- [Occupational Safety and Health Administration \(29 CFR 1910 Subpart I – Personal Protective Equipment\)](#)
- [Occupational Safety and Health Administration \(29 CFR 1926 Subpart L – Scaffolds\)](#)
- [Occupational Safety and Health Administration \(29 CFR 1926 Subpart M – Fall Protection\)](#)

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