

I. Purpose

Fall protection is defined as any means used to protect workers from falls when working in areas where fall hazards exist. Fall protection involves the elimination of fall hazards, the prevention of falls, and the control of falls. Fall protection is required whenever there is a **change in working level** of more than four feet (a drop of four feet or more to the ground or the next level) or six (6) in construction work.

The Occupational Safety and Health Administration (OSHA) has many standards related to fall protection, including: 29 CFR 1910.27 (Fixed Ladders), 29 CFR 1910.26 (Portable Ladders), 29 CFR 1910.25 (Portable Wood Ladders), ANSI A14.3-1956 (Safety Code for Fixed Ladders), 29 CFR 1910.66 (Powered Platforms), 29 CFR 1910.67 (Vehicle-Mounted Elevated and Rotating Work Platforms), 29 CFR 1910.23 (Guarding Floor and Wall Openings and Holes), 29 CFR 1910.128-.131 (Fall Arrest Systems), and the General Duty Clause (Section 5(a)(1), OSH Act).

When engineering or administrative controls will not provide an acceptable level of protection, protective equipment shall be provided to achieve safe working conditions. When fall protection equipment is necessary, the requirements of the Fall Protection Standard (1926.500 – Subpart M) shall be followed.

II. Definitions

Fall Arrest System: A personal fall arrest system means a system used to **arrest** a worker in a fall from a working level. It consists of an anchor point, connectors, body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. The entire system must be capable of withstanding the tremendous impact forces involved in *stopping* or arresting the fall. The forces increase with the fall distance due to acceleration.

Fall Restraint System: A fall restraint system consists of the equipment used to keep a worker **from reaching a fall point**, such as the edge of a roof or the edge of an elevated working surface. The most commonly utilized fall restraint system is a standard guardrail. A tie off system that “restrains” the worker from falling off an elevated working surface is another type of fall restraint.

Safety Monitor System: The safety monitor systems use a person (the safety monitor), rather than a mechanical system to warn roofers when they are six feet or more above a lower level and in danger of falling. The safety monitor, who must be a competent person, is responsible for recognizing fall hazards and warning workers about them.

- The Safety Monitor shall be competent to recognize fall hazards.
- The Safety Monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner.
- The Safety Monitor shall be close enough to communicate orally with the employees.
- The Safety Monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function.

III. Scope

Engineering Controls: When feasible, all operations from which there is a drop of more than four (4) feet shall be guarded by a rail, fence, half door, or equivalent barrier. Barrier design criteria are established in OSHA 1910.23. Where barriers are not feasible for work at elevated heights (greater than 4 feet), fall protection equipment or policy must be used per OSHA General Industry Standards. Suitable anchorage points shall be utilized.

Personal Protective Equipment: Personal Protective Equipment (PPE) requirements for fall protection vary depending upon the task being conducted. If tasks are not identified below, the individual required to work at an elevated height shall receive instructions from their Supervisor prior to proceeding.

Bucket trucks will be used for tasks such as trimming branches from tall trees and distribution work. Employees will use safety harnesses and lanyards to prevent falls from the bucket. No overextending (over-reaching) from the bucket is allowed. In addition, boom and bucket load limits specified by the manufacturer shall not be exceeded.

Confined Spaces: If a fall hazard exists, more than a 4 feet change in work surfaces, each worker entering a confined space shall be protected by a full body harness, lifeline, and winch capable of retrieving personnel from vertical entries. Additional information regarding fall protection in Permit Required Confined Spaces is included in the City of Hendersonville's Confined Space Entry Program.

Elevated Work Platforms/Aerial/Scissor Lifts: Elevated work platforms are equipped with rails to provide edge protection. In addition, each worker must be protected by a safety harness attached to a shock absorbing lanyard. The lanyard shall be securely attached to the anchor point of the platform approved by the manufacturer. The lanyard should safely suspend the worker in event of a fall and shall ensure the worker can fall no more than six (6) feet. Fall protection equipment must meet design criteria specified in Appendix C, Section 1 of OSHA 1910.66. Employees must also keep feet flat on the floor of the lift.

Tasks such as changing overhead light bulbs located in tall ceilings not accessible by ladders will be performed using scaffolding or an aerial lift. If scaffolding is used, a competent person must be available for monitoring the scaffolding system.

Tasks such as painting will be performed using ladders or via aerial lift when not accessible by ladders.

Fall Arrest Systems: Personal fall arrest systems and their use shall comply with the provisions of 1926.502(d).

1. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.
2. Connectors shall have a corrosion-resistant finish and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.
3. "D"-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds.
4. Snap hooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snap hook. Effective January 01, 1998, only locking type snap hooks shall be used.
5. Lifelines shall be protected against being cut or abraded.
6. Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
7. Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet or less, rip stitch lanyards and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
8. Ropes and straps (webbing) used in lanyards, lifelines and strength components of body harnesses shall be made from synthetic fibers.
9. Anchorages used for attachment of personal fall arrest equipment must be capable of supporting at least 5,000 pounds per employee attached.
10. The attachment point of a body harness shall be located in the center of the wearer's back near shoulder level or above the wearer's head.
11. Personal fall arrest systems and their components shall be used only for employee protection, not for hoisting materials.
12. Personal fall arrest systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

13. Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration. Defective components shall be removed from service.

Fire Department Ladder Inspections: Ladders utilized by the Hendersonville Fire Department are inspected in accordance with NFPA 1500 regulations. The ladder inspections are conducted and certified by a third party.

Flat Roofs: For work such as checking for roof leaks, minor repair of roof leaks and clearing roof drains, employees are required to stay 6 feet from the edge of the roof. The flag line 39" high will be laced around the work area to clearly show the allowable work zone. If this task requires the employee to work in close proximity to the "6 foot from edge zone", the work will be conducted using a Safety Monitoring System. If a ladder is used to access the roof, the rungs of the ladder must extend three feet above the roof line/landing in order for an employee to safely access and dismount the roof.

Roof top HVAC work can be safely performed when the employee stays in close proximity to the unit. In some cases, roof hatches are located near the center of the roof. HVAC systems are located in close proximity to the hatches eliminating the need to approach the roof edge. If a ladder is used to access the roof top unit, the rungs of the ladder must extend three feet above the roof line/landing in order for an employee to safely access and dismount the roof.

Portable Ladder Use: Portable ladders are often used. The ladders must be inspected before each use to be certain rungs are in place and free from oil, dirt, grass, etc. Metal spreaders or locking devices must be in place and in use to hold the front and back sections in place when the ladder is being used. On potentially slippery surfaces, anti-slip/safety shoe/foot components must be in correct position. When ladders are used to reach roofs or other high places, three feet of the ladder rails must extend above the landing.

If ladders are to be used near electrical lines where the employee or ladder could come in accidental contact with the lines, only ladders with nonconductive side rails will be used.

Ladders should be used on level, stable surfaces only. They may not be used in doorways or high traffic areas without first barricading the area. The top and bottom of the ladder should be kept clear at all times.

Tasks such as changing overhead light bulbs located in tall ceilings not accessible by ladders will be performed using scaffolding or an aerial lift. If scaffolding is used, a competent person must be available for monitoring the scaffolding system.

Tasks such as painting will be performed using ladders or via aerial lift when not accessible by ladders.

If ladders are used to perform the task of gutter cleaning, no over-extending (over-reaching) is allowed.

Employees will follow correct ladder procedures such as:

1. Be certain ladder is properly set up (4:1) ratio - the heel of the ladder should be 1/4 the expected height away from the wall.
2. Ensure that each rung of ladder is firmly attached and locking devices are in good working order.
3. Face ladder when ascending or descending.
4. Maintain three points of contact when ascending or descending 29 CFR 1910.23(b)(12). OSHA considers that grasping the ladder on horizontal rungs is preferable but recognizes that there may be times when it is necessary for employees to hold the side rails.
5. No hopping or jumping off the ladder rungs or steps.
6. Locking the leg into the ladder rungs, safety belts, or fall arrest harness is required if hands free work is performed.
7. Anti-slip/safety shoe/foot components (ladder feet) must be in correct position.

Portable Ladder Inspections: Ladder components must be inspected before each use to be certain rungs are in place and free from oil, dirt, grass, etc. Ladders should never be painted. Any ladder with damaged or missing components should be tagged out of service until properly repaired. Ladders stored on trucks and exposed to the elements (sun, rain, excessive temperature, etc.) should be inspected for excessive wear, cracks, splits or other damage. Damaged ladders should be reported to the employee's Supervisor immediately.

Scaffolding Requirements: The City of Hendersonville shall provide a competent person for each job task which requires scaffolding. The scaffolding shall be installed so as to ensure the following:


1. Scaffolds and components must support four times the intended load.
2. Scaffolds must be fully planked.
3. Scaffold planks or mudsills must not be painted.
4. No mixing of dissimilar components.
5. Guardrails will be in place on all scaffolds over ten feet.

The City of Hendersonville will be certain the competent person is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and has the authorization to take prompt corrective measures to eliminate them. The competent person will inspect the scaffolding during all processes such as erecting, disassembling, moving, operating, repairing and maintaining. The design criteria, maximum intended load-carrying capacity and intended use of the scaffolding will be checked frequently.

IV. Training

When an employee is hired, whenever there is a change in the assignment, when inadequacies are noticed, or changes in equipment are made, they will receive the training on fall protection.

Note: The requirements of this program do not apply to firefighting equipment or to the vehicles, upon which aerial devices are mounted, except with respect to the requirement that a vehicle be a stable support for the aerial device.



John F. Connet, City Manager

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