



FALL PROTECTION

1. PURPOSE

This policy will provide Okaloosa County employees guidance on the proper application of fall protection and requirements and criteria for fall protection in construction workplaces thereof. These requirements are to be observed throughout all work areas located within County property or throughout the Okaloosa County.

2. DEFINITIONS

- 2.1. **Anchorage** means a secure point of attachment for lifelines, lanyards or deceleration devices.
- 2.2. **Body Belt (Safety Belt)** means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.
- 2.3. **Body Harness** means straps which may be secured about 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.
- 2.4. **Buckle** means any device for holding the body belt or body harness closed around the employee's body.
- 2.5. **Connector** means a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner, or it may be an integral component of part of the system (such as a buckle or dee-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).
- 2.6. **Controlled Access Zone (CAZ)** means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.
- 2.7. **Dangerous Equipment** means equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

- 2.8. **Deceleration Device** means any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.
- 2.9. **Deceleration Distance** means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.
- 2.10. **Equivalent** means alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.
- 2.11. **Failure** means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.
- 2.12. **Free Fall** means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.
- 2.13. **Free Fall Distance** means the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.
- 2.14. **Guardrail System** means a barrier erected to prevent employees from falling to lower levels.
- 2.15. **Hole** means a gap or void 2 inches (5.1 cm) or more in its least dimension, in a floor, roof, or other walking/working surface.
- 2.16. **Infeasible** means that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.
- 2.17. **Lanyard** means a flexible line of rope, wire rope, 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.
- 2.18. **Leading Edge** means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) 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.

- 2.19. **Lifeline** means a component consisting of a flexible line for connection to an anchorage at one end to hang 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.
- 2.20. **Low-Slope Roof** means a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).
- 2.21. **Lower Levels** means those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.
- 2.22. **Opening** means a gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.
- 2.23. **Personal Fall Arrest System** means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.
- 2.24. **Positioning Device System** means 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.
- 2.25. **Rope Grab** means 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.
- 2.26. **Roof** means the exterior surface on the top of a building. This does not include floors or formwork which, because a building has not been completed, temporarily become the top surface of a building.
- 2.27. **Roofing Work** means the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.
- 2.28. **Safety-Monitoring System** means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.
- 2.29. **Self-Retracting Lifeline/Lanyard** means a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

- 2.30. **Snaphook** means 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. Snaphooks are generally one of two types:
- 2.30.1. The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection;
or
- 2.30.2. The non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snaphook as part of personal fall arrest systems and positioning device systems is prohibited.
- 2.31. **Steep Roof** means a roof having a slope greater than 4 in 12 (vertical to horizontal).
- 2.32. **Toeboard** means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.
- 2.33. **Unprotected Sides And Edges** means any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.
- 2.34. **Walking/Working Surface** means 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 their job duties.
- 2.35. **Warning Line System** means a barrier erected on a roof to warn employees that 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.
- 2.36. **Work Area** means that portion of a walking/working surface where job duties are being performed.

3. **SITUATIONS REQUIRING FALL PROTECTION**

3.1. **General**

Before work can begin all walking/working surfaces on which employees are to work will have the surface tested to have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.

3.2. Unprotected Sides And Edges

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

3.3. Leading edges

3.3.1. Each employee who is constructing a leading edge 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of OSHA Standard 29 CFR 1926.502.

3.3.2. Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.

3.3.3. Each employee on a walking/working surface 6 feet (1.8 m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

3.4. Hoist areas

Each employee in a hoist area shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, [or chain, gate, or guardrail] or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.

3.5. Holes

3.5.1. Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) more than 6 feet (1.8 m) above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.

3.5.2. Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) by covers.

3.5.3. Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers.

3.6. **Ramps, runways, and other walkways**

Each employee on ramps, runways, and other walkways shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems.

3.7. **Excavations**

3.7.1. Each employee at the edge of an excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier;

3.7.2. Each employee at the edge of a well, pit, shaft, and similar excavation 6 feet (1.8 m) or more in depth shall be protected from falling by guardrail systems, fences, barricades, or covers.

3.8. **Dangerous equipment**

3.8.1. Each employee less than 6 feet (1.8 m) above dangerous equipment shall be protected from falling into or onto the dangerous equipment by guardrail systems or by equipment guards.

3.8.2. Each employee 6 feet (1.8 m) or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

3.9. **Roofing work on Low-slope roofs**

Each employee engaged in roofing activities on low-slope roofs, with unprotected sides and edges 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or, on roofs 50-feet (15.25 m) or less in width (see Appendix A to subpart M of 29 CFR 1926), the use of a safety monitoring system alone [i.e. without the warning line system] is permitted.

3.10. **Steep roofs**

Each employee on a steep roof with unprotected sides and edges 6 feet (1.8 m) or more above lower levels shall be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

3.11. **Residential construction**

3.11.1. Each employee engaged in residential construction activities 6 feet (1.8 m) or more above lower levels shall be protected by guardrail systems, safety net

system, or personal fall arrest system unless another provision in this section provides for an alternative fall protection measure. Exception: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer shall develop and implement a fall protection plan which meets the requirements of paragraph (k) of OSHA Standard 29 CFR1926.502.

3.11.2. Note: There is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above-listed fall protection systems. Accordingly, the employer has the burden of establishing that it is appropriate to implement a fall protection plan which complies with 29 CFR 1926.502(k) for a particular workplace situation, in lieu of implementing any of those systems.

3.12. **Wall openings**

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 m) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 m) above the walking/working surface, shall be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

3.13. **Walking/working surfaces not otherwise addressed**

Except as provided in other policies in this manual, each employee on a walking/working surface 6 feet (1.8 m) or more above lower levels shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system.

4. **FALL PROTECTION SYSTEMS**

4.1. Prior to work the work site will be evaluated and appropriate fall protection systems will be employed. As listed in portions of this policy, the following systems are approved for use provided they meet applicable standards:

Personal Fall Arrest	Horizontal lifeline
Controlled Access Zone	Vertical lifeline
Guardrail	Positioning Device
Safety Monitoring System	
Safety Net	

4.2. For the majority of work performed at Okaloosa County the personal fall arrest system utilizing a lifeline with lanyard attached to an appropriate anchorage will be used.

4.3. **Personal fall arrest systems-general**

4.3.1. Personal fall arrest systems and their use shall comply with the provisions set forth below. Body belts are not acceptable as part of a personal fall arrest

system. Note: The use of a body belt in a positioning device system is acceptable.

- 4.3.2. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.
- 4.3.3. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.
- 4.3.4. Dee-rings and snaphooks shall have a minimum tensile strength of 5,000 pounds (22.2 kN).
- 4.3.5. Dee-rings and snaphooks shall be proof-tested to a minimum tensile load of 3,600 pounds (16 kN) without cracking, breaking, or taking permanent deformation.
- 4.3.6. Snaphooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or shall be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member. Only locking type snaphooks shall be used.
- 4.3.7. Unless the snaphook is a locking type and designed for the following connections, snaphooks shall not be engaged:
 - 4.3.7.1. directly to webbing, rope or wire rope;
 - 4.3.7.2. to each other;
 - 4.3.7.3. to a dee-ring to which another snaphook or other connector is attached;
 - 4.3.7.4. to a horizontal lifeline; or
 - 4.3.7.5. to any object which is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself.
- 4.3.8. On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.
- 4.3.9. Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.
- 4.3.10. Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds (22.2 kN).

- 4.3.11. When vertical lifelines are used, each employee shall be attached to a separate lifeline.
- 4.3.12. Lifelines shall be protected against being cut or abraded.
- 4.3.13. Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet (0.61 m) or less shall be capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kN) applied to the device with the lifeline or lanyard in the fully extended position.
- 4.3.14. Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet (0.61 m) or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kN) applied to the device with the lifeline or lanyard in the fully extended position.
- 4.3.15. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.
- 4.3.16. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows:
 - 4.3.16.1. as part of a complete personal fall arrest system which maintains a safety factor of at least two; and
 - 4.3.16.2. under the supervision of a qualified person.
- 4.3.17. Personal fall arrest systems, when stopping a fall, shall:
 - 4.3.17.1. limit maximum arresting force on an employee to 900 pounds (4 kN) when used with a body belt;
 - 4.3.17.2. limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness;
 - 4.3.17.3. be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;
 - 4.3.17.4. bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 m); and,
 - 4.3.17.5. have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8 m), or the free fall distance permitted by the system, whichever is less.
- 4.3.18. The attachment point of the body belt shall be located in the center of the wearer's back. The attachment point of the body harness shall be located in

the center of the wearer's back near shoulder level, or above the wearer's head.

NOTE

Body belts, harnesses, and components shall be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

4.3.19. 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.

4.3.20. The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

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

4.3.22. Body belts shall be at least one and five-eighths (1 5/8) inches (4.1 cm) wide.

4.3.23. Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists except as specified in other subparts of this Part.

4.3.24. When a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the walking/working surface.

5. **FALL PROTECTION REQUIREMENTS ON SPECIFIC COUNTY EQUIPMENT**

5.1. **Aerial Lifts – (bucket trucks, “cherry pickers”)**

Employees operating and/or riding on aerial lifts shall use a full body harness and 6 foot lanyard attached to appropriate anchor point when using equipment.

5.2. **Articulating Boom Platforms**

Employees operating and/or riding on articulating boom platforms shall use a full body harness and 6 foot lanyard attached to appropriate anchor point when using equipment.

5.3. **Scaffolds**

5.3.1. Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level. Paragraphs 5.3.1 through 5.3.7 of this section establish the types of fall protection to be provided to the employees on each type of scaffold. Paragraph 5.3.2 of this section addresses fall protection for scaffold erectors and dismantlers.

- 5.3.1.1. Note to paragraph 5.3.1: The fall protection requirements for employees installing suspension scaffold support systems on floors, roofs, and other elevated surfaces are set forth in subpart M of 29 CFR 1926.
- 5.3.1.2. Each employee on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system;
- 5.3.1.3. Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system;
- 5.3.1.4. Each employee on a crawling board (chicken ladder) shall be protected by a personal fall arrest system, a guardrail system (with minimum 200 pound toprail capacity), or by a three-fourth inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board;
- 5.3.1.5. Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200 pound toprail capacity) when the platform is supported by ropes;
- 5.3.1.6. Each employee on a walkway located within a scaffold shall be protected by a guardrail system (with minimum 200 pound toprail capacity) installed within 9 1/2 inches (24.1 cm) of and along at least one side of the walkway.
- 5.3.1.7. Each employee performing overhand bricklaying operations from a supported scaffold shall be protected from falling from all open sides and ends of the scaffold (except at the side next to the wall being laid) by the use of a personal fall arrest system or guardrail system (with minimum 200 pound toprail capacity).
- 5.3.1.8. For all scaffolds not otherwise specified in this section, each employee shall be protected by the use of personal fall arrest systems or guardrail systems meeting the requirements of paragraph 5.3.4 of this section.
- 5.3.2. A competent person shall determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Supervisors are required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.
- 5.3.3. In addition to meeting the requirements of section 5.1, personal fall arrest systems used on scaffolds shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

- 5.3.3.1. When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.
 - 5.3.3.2. When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.
 - 5.3.3.3. When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both of the suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.
 - 5.3.3.4. Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.
- 5.3.4. Guardrail systems installed to meet the requirements of this section shall comply with the following provisions:
- 5.3.4.1. Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.
 - 5.3.4.2. The top edge height of toprails or equivalent member on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above the platform surface. The top edge height on supported scaffolds manufactured and placed in service before January 1, 2000, and on all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches (0.9 m) and 45 inches (1.2 m). When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of paragraph 5.3.4.
 - 5.3.4.3. When midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.

- 5.3.4.4. When midrails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.
- 5.3.4.5. When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.
- 5.3.4.6. When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches (48 cm) apart.
- 5.3.4.7. Each toprail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 100 pounds (445 n) for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds (890 n) for guardrail systems installed on all other scaffolds.
- 5.3.4.8. When the loads specified in paragraph 5.3.4.7 of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph 5.3.4.2 of this section.
- 5.3.4.9. Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the midrail or other member of at least 75 pounds (333 n) for guardrail systems with a minimum 100 pound toprail capacity, and at least 150 pounds (666 n) for guardrail systems with a minimum 200 pound toprail capacity.
- 5.3.4.10. Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.
- 5.3.4.11. Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
- 5.3.4.12. The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.
- 5.3.4.13. Steel or plastic banding shall not be used as a toprail or midrail.
- 5.3.4.14. Manila or plastic (or other synthetic) rope being used for toprails or midrails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the strength requirements of paragraph 5.3 of this section.

- 5.3.4.15. Crossbracing is acceptable in place of a midrail when the crossing point of two braces is between 20 inches (0.5 m) and 30 inches (0.8 m) above the work platform or as a toprail when the crossing point of two braces is between 38 inches (0.97 m) and 48 inches (1.3 m) above the work platform. The end points at each upright shall be no more than 48 inches (1.3 m) apart.

6. PROTECTION FROM FALLING OBJECTS

- 6.1. When an employee is exposed to falling objects, hard hats will be worn and one of the following measures shall be implemented:
 - 6.1.1. Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels; or,
 - 6.1.2. Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced; or,
 - 6.1.3. Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

7. TRAINING

7.1. Program

- 7.1.1. The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.
- 7.1.2. The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:
 - 7.1.2.1. The nature of fall hazards in the work area;
 - 7.1.2.2. The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
 - 7.1.2.3. The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
 - 7.1.2.4. The role of each employee in the safety monitoring system when this system is used;

- 7.1.2.5. The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- 7.1.2.6. The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and
- 7.1.2.7. The role of employees in fall protection plans;
- 7.1.2.8. The standards contained in this subpart.

7.2. Certification Of Training

- 7.2.1. The supervisor shall verify compliance with this section by preparing a written certification record. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
- 7.2.2. The latest training certification shall be maintained.

7.3. Retraining

- 7.3.1. When the supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by this section, the supervisor shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:
 - 7.3.1.1. Changes in the workplace render previous training obsolete; or
 - 7.3.1.2. Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
 - 7.3.1.3. Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.