074. FALL PROTECTION

01. Scope

a. Fall protection shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be constructed to prohibit better or otherwise safer conditions than specified herein. (7-1-97)

b. The provisions of this section do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of work operations and after all work operations have been completed. (7-1-97)

02. Definitions: For definitions of other terms used in this section, see sub-section 010. (7-1-97)
a. Anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. (7-1-97)

b. Body Belt is a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. (7-1-97)

c. Body Harness are 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. (7-1-97)

d. Buckle is any device for holding the body belt or body harness closed around the employee's body. (7-1-97)

e. Connector is 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 carabinier, or it may be an integral component of the system (such as a buckle or "D" ring sown into a body belt or body harness, or a snap-hook spliced or sown to a lanyard or self-retracting lanyard). (7-1-97)

f. Controlled Access Zone (CAZ) is 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. (7-1-97)

g. Dangerous Equipment is 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 into such equipment. (7-1-97)

h. Deceleration Device is 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. (7-1-97)

i. Deceleration Distance is 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 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. (7-1-97)

j. Equivalent are 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. (7-1-97)

k. Failure is load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded. (7-1-97)
l. Free Fall is the act of falling before a personal fall arrest system begins to apply force to arrest the fall. (7-1-97)

m. Free Fall Distance is the vertical displacement of the fall arrest attachment point on the employee's 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. (7-1-97)

n. Guardrail System is a barrier erected to prevent employees from falling to lower levels. (7-1-97)

o. Hole is a gap or void two (2) inches or more in its least dimension, in a floor, roof, or other walking/working surface. (7-1-97)

p. Infeasible means that it is impossible to perform work using a conventional fall protection system (i.e., guardrail system, safety net, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection. (7-1-97)

q. Lanyard is a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body harness to a deceleration device, lifeline, or anchorage. (7-1-97)

r. Leading Edge is the edge of a floor, roof, or form-work for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or form-work 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. (7-1-97)

s. Lifeline is 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. (7-1-97)

t. Low-slope Roof is a roof having a sloop less or equal to four-to-twelve (4:12) (vertical to horizontal). (7-1-97)

u. Lower Levels are 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. (7-1-97)

v. Mechanical Equipment is all motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mopcarts. (7-1-97)

w. Opening is a gap or void thirty (30) inches or more high and eighteen (18) inches or more wide, in a wall or partition, through which employees can fall to a lower level. (7-1-97)
x. Overhand bricklaying and related work is the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhead bricklaying process. (7-1-97)

y. Personal Fall Arrest System is a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connects, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. (7-1-97)

z. Positioning Device System is 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. (7-1-97)

aa. Rope Grab is 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 principal of inertial locking, cam/level locking, or both. (7-1-97)

bb. Roof is 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. (7-1-97)

c. Roofing Work is 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. (7-1-97)

dd. Safety-monitoring System is a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards. (7-1-97)

e. Self-retracting Lifeline/Lanyard is 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. (7-1-97)

ff. Snaphook is 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. The only approved snaphooks are the locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection. (7-1-97)

gg. Steep Roof is a roof having a slope greater than Four-in-twelve (4:12)(vertical to horizontal) (7-1-97)

hh. Toe-board is a low protective barrier, four (4) inches high minimum that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel. (7-1-97)
**ii. Unprotected Sides and Edges** is 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 forty-two (42) inches high. (7-1-97)

**jj. Walking/Working Surface** is any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, form-work and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties. (7-1-97)

**kk. Warning Line System** is 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 a guardrail, body harness, or safety net systems to protect employees in the area. (7-1-97)

**ll. Work Area** is that portion of a walking/working surface where job duties are being performed. (7-1-97)

**03. General Requirements** (7-1-97)

**a.** The employer shall determine if the walking/working surface on which its employees are to work 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. (7-1-97)

**04. Unprotected Sides and Edges** (7-1-97)

**a.** Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems. (7-1-97)

**b.** Each employee who is constructing a leading edge above lower levels shall be protected from falling by guardrail, 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 this section. 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 in lieu of implementing any of those systems. (7-1-97)

**c.** Each employee on a walking/working surface 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 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. (7-1-97)
05. Hoist Areas: (7-1-97)

a. Each employee in a hoist area shall be protected from falling 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. (7-1-97)

06. Holes: (7-1-97)

a. Each employee on walking/working surfaces shall be protected from falling through holes (including skylights) (7-1-97)

b. Each employee on a walking/working surface shall be protected from tripping in or stepping into or through holes (including skylights) by covers. (7-1-97)

c. Each employee on a walking/working surface shall be protected from objects falling through holes (including skylights) by covers. (7-1-97)

07. Form-work and Reinforcing Steel: (7-1-97)

a. Each employee on the face of form-work or reinforcing steel shall be protected from falling to lower levels by personal fall arrest systems, safety net systems, or positioning device systems. (7-1-97)

08. Ramps, Runways, and Other Walkways: (7-1-97)

a. Each employee at the edge of an excavation shall be protected from falling by guardrail systems, fences, barricades when the excavations are not readily seen because of plant growth or other visual barrier. (7-1-97)

b. Each employee at the edge of a well, pit, shaft, and similar excavation shall be protected from falling by guardrail systems, fences, barricades, or covers. (7-1-97)

09. Dangerous Equipment: (7-1-97)

a. Each employee above dangerous equipment shall be protected from falling into or onto dangerous equipment by guardrail systems or by equipment guards. (7-1-97)

b. Each employee six (6) feet or more above dangerous equipment shall be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems. (7-1-97)

10. Roofing Work on Low-Slope Roofs: (7-1-97)
a. Except as otherwise provided in this section, each employee engaged in roofing activities on low-slope roofs, with unprotected sides and edges six (6) feet 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 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 fifty (50) feet or less in width the use of a safety monitoring system [i.e. without the warning line system] is permitted. (7-1-97)

11. Steep Roofs: (7-1-97)

a. Each employee on a steep roof with unprotected sides and edges above lower levels shall be protected from falling by guardrail systems with toe-boards, safety net systems, of personal fall arrest systems. (7-1-97)

12. Wall Openings: (7-1-97)

a. 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 above lower levels and the inside bottom edge of the wall opening is less than forty-two (42) inches 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. (7-1-97)

13. Protection from Falling Objects: (7-1-97)

a. When a person is exposed to falling objects, the employer shall have each employee wear a hard hat. (7-1-97)

b. Erect toe-boards, screens, or guardrail systems to prevent objects from falling from higher levels. (7-1-97)

c. Erect a canopy structure and keep potential falling 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. (7-1-97)

d. Barricade the area to which objects could fall, prohibit employees from entering the barricade 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. (7-1-97)

14. Fall Protection Systems Criteria and Practices: (7-1-97)

a. Employers shall provide and install all fall protection systems required by this section for an employee, and shall comply with all applicable parts of this standard before that employee beginning the work that necessitates the fall protection. (7-1-97)

b. Guard rail systems shall comply with the provisions of sub-section 070.14 of this standard as it applies to employee work places. (7-1-97)
c. Safety net systems shall comply with the provisions of sub-section 050.11 of this standard. (7-1-97)

d. Personal fall arrest systems and their use shall comply with the provisions of sub-section 074.15 of this section. (7-1-97)

e. Positioning device systems and their use shall comply with the provisions of sub-section 074.16 of this section. (7-1-97)

f. Warning line systems and their use shall comply with the provisions of sub-section 074.17 of this section. (7-1-97)

15. Personal Fall Arrest Systems: (7-1-97)

a. Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials. (7-1-97)

b. Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system. (7-1-97)

c. "D" rings and snaphooks shall have a minimum tensile strength of five-thousand (5,000) pounds. (7-1-97)

d. "D" rings and snaphooks shall be proof-tested to a minimum tensile load of three-thousand-six-hundred (3,600) pounds without cracking, breaking, or taking permanent deformation. (7-1-97)

e. 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. (7-1-97)

f. Unless the snaphook is a locking type and designed for the following connections, snaphooks shall not be engaged: directly to webbing, rope or wire rope; to each other; to a "D" ring to which another snaphook or other connector is attached; to a horizontal lifeline; or to any object which is incompatibility shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook and release itself. (7-1-97)

g. On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical life lines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline. (7-1-97)
h. 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 (2). (7-1-97)

i. Lanyards and vertical lifelines shall have a minimum breaking strength of five-thousand (5,000) pounds. (7-1-97)

j. When vertical lifelines are used, each employee shall be attached to a separate lifeline. EXCEPTION: During the construction of elevator shafts, two (2) employees may be attached to the same lifeline in the hoistway, provided both employees are working atop a false car that is equipped with guardrails; the strength of the lifeline is ten-thousand (10,000) pounds (five-thousand (5,000) pounds per employee); and all other criteria specified in this section for lifelines have been met. (7-1-97)

k. Lifelines shall be protected against being cut or abraded. (7-1-97)

l. Self-retracting lifelines and lanyards which automatically limit free fall distance to two (2) feet or less shall be capable of sustaining a minimum tensile load of three-thousand (3,000) pounds applied to the device with the lifeline or lanyard in the fully extended position. (7-1-97)

m. Self-retracting lifelines and lanyards which do not limit free fall distance to two (2) feet or less, ripstitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of five-thousand (5,000) pounds applied to the device with the lifeline or lanyard in the fully extended position. (7-1-97)

n. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of belts and body harnesses shall be made from synthetic fibers. (7-1-97)

o. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspended platforms and capable of supporting at least five-thousand (5,000) pounds per employee attached, or shall be designed, installed, and used as follows: as part of a complete personal fall arrest system which maintains a safety factor of at least two (2); and under the supervision of a qualified person. (7-1-97)

p. Personal fall arrest systems, when stopping a fall, shall limit maximum arresting force on an employee to one-thousand-eight-hundred (1,800) pounds when used with a body harness; be rigged such that an employee can neither free fall more than six (6) feet, nor contact any lower level; bring an employee to a complete stop and limit maximum deceleration distance an employee travels to three-point-five (3.5) feet; and, have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six (6) feet, or the free fall distance permitted by the system, whichever is less. (7-1-97)

q. 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. (7-1-97)
Body 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. (7-1-97)

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. (7-1-97)

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. (7-1-97)

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. (7-1-97)

Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists except as specified elsewhere in this standard. (7-1-97)

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. (7-1-97)

Body harnesses and components, shall be used only for employee protection (as part of a personal fall arrest system) and not to hoist materials. (7-1-97)

### 16. Positioning Device Systems: (7-1-97)

Positioning devices shall be rigged such that an employee can not free fall more than two (2) feet. (7-1-97)

Positioning devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or three-thousand (3,000) pounds, whichever is greater. (7-1-97)

Connectors shall be drop forged, pressed of formed steel, or made of equivalent materials. (7-1-97)

Connectors shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of this system. (7-1-97)

Connecting assemblies shall have a minimum tensile strength of five-thousand (5,000) pounds. (7-1-97)

"D" rings and snaphooks shall be proof tested to a minimum tensile load of three-thousand-six-hundred (3,600)-pounds without cracking, breaking, or taking permanent deformation. (7-1-97)

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 snap hook by the contact of the snap hook keeper by the connected member. Only locking type snap hooks shall be used. (7-1-97)

**h.** Unless the snap hook is a locking type and designed for the following connections, snap hooks shall not be engaged: directly to webbing, rope or wire rope; to each other; to a "D" ring to which another snap hook or other connector is attached; to a horizontal lifeline; or to any object which is incompatibility shaped or dimensioned in relation to the snap hook such that unintentional disengagement could occur by the connected object being able to depress the snap hook and release itself. (7-1-97)

**i.** Positioning device systems shall be inspected prior to each use for wear, damage, and other deterioration, and defective components shall be removed from service. (7-1-97)

**j.** Positioning device systems, shall be used only for employee protection (as part of a personal fall arrest system) and not to hoist materials. (7-1-97)

**17. Warning Line Systems:** (7-1-97)

**a.** The warning line shall be erected around all sides of the work area. (7-1-97)

**b.** When mechanical equipment is not being used, the warning line shall be erected not less than six (6) feet from the roof edge. (7-1-97)

**c.** When mechanical equipment is being used, the warning line shall be erected not less than six (6) feet from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than ten (10) feet from the roof edge which is perpendicular to the direction of mechanical equipment operation. (7-1-97)

**d.** Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines. (7-1-97)

**e.** When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area. (7-1-97)

**f.** Warning lines shall consist of ropes, wires, or chains, and supporting stanchions. (7-1-97)

**g.** The rope, wire, or chain shall be flagged at not more than six (6) foot intervals with high visibility material. (7-1-97)

**h.** The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than thirty-four (34) inches from the walking/working surface and its highest point is no more than thirty-nine (39) inches from the walking/working surface. (7-1-97)
i. After being erected, with rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over a force of at least sixteen (16) pounds applied horizontally against the stanchion, thirty (30) inches above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge. (7-1-97)

j. The rope, wire, or chain shall have a minimum tensile strength of five-hundred (500) pounds, and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in sub-section 074.17.i of this standard. (7-1-97)

k. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over. (7-1-97)

l. No employees shall be allowed in the area between a roof edge and warning line unless the employee is performing roofing work in the area. (7-1-97)

m. Mechanical equipment on roofs shall be used, maintained, or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system. (7-1-97)

18. Controlled Access Zones: (7-1-97)

a. When used to control access to areas where leading edge and other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access. (7-1-97)

b. When control lines are used, they shall be erected not less than six (6) feet nor more than twenty-five (25) feet from the unprotected or leading edge. (7-1-97)

c. The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge. (7-1-97)

d. The control line shall be connected on each side to a guardrail system or wall. (7-1-97)

e. Control lines shall consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions. (7-1-97)

f. Each control line shall be flagged or otherwise clearly marked at not more than six (6) foot intervals with high visibility material. (7-1-97)

g. Each control line shall be rigged and supported in such a way that its lowest point (including sag) is not less than thirty-nine (39) inches from the walking/working surface and its highest point is no more than forty-five (45) inches from the walking/working surface. (7-1-97)

h. Each control line shall have a minimum breaking strength of two-hundred (200) pounds. (7-1-97)
i. On floors and roofs where guardrail systems are not in place prior to the beginning of operations, controlled access zones shall be enlarged, as necessary, to enclose all points of access, material handling areas, and storage areas. (7-1-97)

j. On floors and roofs where guardrail systems are in place, but need to be removed to allow work to take place, only that portion of the guardrail necessary to accomplish that day's work shall be removed. (7-1-97)

19. Safety Monitoring Systems: (7-1-97)

a. The employer shall designate a competent person to monitor the safety of other employees. (7-1-97)

b. The safety monitor shall be competent to recognize fall hazards. (7-1-97)

c. The safety monitor shall warn the employee when it appears that the employees is unaware of a fall hazard or is acting in an unsafe manner. (7-1-97)

d. The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored. (7-1-97)

e. The safety monitor shall be close enough to communicate orally with the employee. (7-1-97)

f. The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function. (7-1-97)

g. Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in operations on low slope roofs. (7-1-97)

h. No employee, other than the employee engaged in the work or an employee covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system. (7-1-97)

i. Each employee working in a controlled access zone shall be directed to comply promptly with fall hazard warnings from safety monitors. (7-1-97)

20. Fall Protection Plan: (7-1-97)

a. A written fall protection plan shall be prepared by a qualified person and developed specifically for the site where the work is to be performed and the plan must be maintained up to date. (7-1-97)

b. Any changes to the fall protection plan shall be approved by a qualified person. (7-1-97)

c. A copy of the fall protection plan with all approved changes shall be maintained at the job site. (7-1-97)
d. The implementation of the fall protection plan shall be under the supervision of a competent person. (7-1-97)

e. The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety net system) are infeasible or why their use would create a greater hazard. (7-1-97)

f. The fall protection plan shall include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, the employer shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling. (7-1-97)

g. Where no other alternative measure has been implemented, the employer shall implement a safety monitoring system in conformance with sub-section 074.19 of this standard. (7-1-97)

h. The fall protection plan shall identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and the employer must comply with the criteria in sub-section 074.18 of this standard. (7-1-97)

i. The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones. (7-1-97)

j. In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) the employer shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents. (7-1-97)

21. Training Program: (7-1-97)

a. 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. (7-1-97)

b. The employer shall assure that each employee has been trained, as necessary, by a competent person qualified in the following areas: the nature of fall hazards in the work area; the correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used; 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; the role of each employee in the safety monitoring system when this system is used; the limitations on the use of mechanical equipment during the performance of work; the correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; the role of employees in fall protection plans; and the requirements of this and related sections of this standard. (7-1-97)
c. When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required the employer shall retrain each such employee. (7-1-97)

d. Other circumstances where retraining is required include, but are not limited to, situations where: changes in the workplace render previous training obsolete; or changes in the types of fall protection systems or equipment to be used render previous training obsolete; or inadequacies in an affected employee's knowledge or use of fall protection or equipment indicate that the employee has not the requisite understanding or skill. (7-1-97)