

FALL PROTECTION PLAN / POLICY

The Occupational Safety and Health Administration requires E Light to provide training for employees who might be exposed to a fall hazard. The training shall enable each employee to recognize the hazards of falling and the procedures to minimize these hazards. This program has been created to assist supervisor in selection and use of fall protection and provide an outline of a written program. Specific required training areas by a competent person should be as follows: **The correct procedures for use, care and maintenance of fall protection.**

The Supervisor is the competent persons for each site and is responsible for training the employees on that site or work area. Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard, several cases are outlined in this program. If, in the employee's opinion, this is the case, the employee is to notify the Supervisor of the concern and the concern addressed before proceeding. Always classify the hazard by evaluating the exposure, the probability, severity or the risk associated.

A Program Coordinator or the Loss Control Director must approve any changes to this Fall Protection Plan.

GENERAL OVERVIEW

Each jobsite may differ slightly, but close adherence to the following guidelines is essential. Any employee working more than **6 foot in height** and / or reaching more than **10 inches** below the walking or working surface must be protected by one or more of the standard means as listed in this section or CFR 29, 1926 Subpart M.

Any employee working off of a scaffolding more than **10 ft. high** must be protected by one or more of the standard means as listed in this section or CFR 29, 1926 Subpart L, also included in this standard; it states in addition to head protection falling object protection must also be provided at 10 ft. **Any employee working off a articulating lift.** lift. Must use a (PFAS) harness, and lanyard. **(Even if the lift. has guardrails the employee must use a harness with lanyard attached.)**

Wall Openings

Any wall openings in which there is a fall of **6 or more feet**, and the opening is more than **19 inches** wide and less than **39 inch** from the floor will need to be protected by a (top) guardrail.

Walking and Working Surfaces

A standard guardrail must protect any walking or working surface 6 feet or more above lower levels. If condition dictate and guardrails and safety nets are not feasible, (Nets cannot be used unless you have at least 25 to 30 below them, many cases installation of guardrails exposed employees to a greater hazard.) the use of safety harnesses and lanyards attached to proper anchor point(s) will be used as. Note: if Personal Fall Arrest Systems (PFAS) are used under 18½ ft., they must be used as a positioning device. In some cases when the safety harnesses and lanyards are not feasible (due to the lack of an effective anchor) the employee must maintain a three-point contact until conditions change.

Floor holes are anything greater that 2 inches by 2 inches and must be protected. Covers must be marked "Hole".

When conducting an Inspection, Investigation, and Estimate or when creating a punch list: employees are not required to use fall protection as outlined in (1926.500(a)(1)

FALL PROTECTION SYSTEMS TO BE USED BY E LIGHT

E Light will use the following conventional fall protection unless it creates a greater hazard or is not feasible:

- *Standard guardrails,*
- *Covers over floor openings, walkway openings etc,*
- *Barricades 6 ft. back. (Danger tape, caution tape, orange fence)*
- *Safety Harnesses, lanyard, tie off strap, Rope and rope grab, or retractable. (PFAS/PD)*
- *Three-point contact when climbing or descending ladders.*
- *Safety Monitors*
- *Control Access Zone*
- *Control Lines*
- *STD 3.1A Residential Fall Protection*

FALL PROTECTION TRAINING OUTLINE

At the beginning of a new site or project the Supervisor must review the fall protection program to ensure that all elements of the program will be consistent with the process of the construction, taking place. A copy of this Program and all approved changes shall be maintained at each work site.

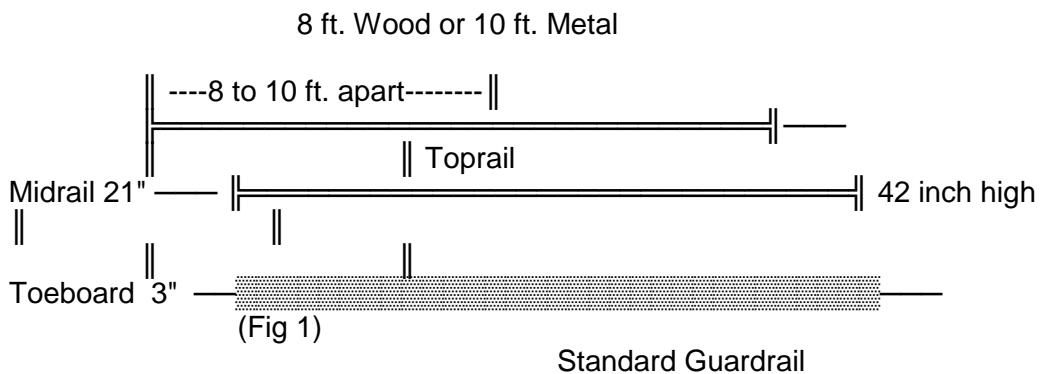
FALL PROTECTION

Training: All E Light employees exposed to fall hazards shall be trained in:

- Guardrails / Barricades.
- Personal Fall Arrest Systems and/or Positioning Devices.
- Warning line systems and safety monitors.
- Control access zones (CAZ) and Control Lines.
- The OSHA Standard for Fall Protection and STD 3.1A.
- In some cases nets and alike products.
- All employees must certify in writing that they have been trained, the date of the training and the trainer.

• **Guardrails**

- A standard guardrail is made up of uprights, a top-rail at least 42 inches high, a mid-rail at 21 inches high and a toe-board at least 3 inches high. (Fig 1) The guardrail must be capable of withstanding 200 lbs. of force in any direction without deflecting more than 3 inches.



- **Personal Fall Arrest Systems and Positioning Devices**

Personal fall Arrest Systems (PFAS) can only be used if the fall hazard is over 18½ ft. Explanation: The D ring is in the center of the back at 5' then the lanyard can be 6 ft., we are now at 11 ft., with the shock absorber extends 3½' now we are at 14½' the rope will stretch 3½' now we are at 18 ft. and you still have an anchor or tie strap they allow ½ ft. for a total of 18½ feet, as not to hit the ground. Anything under 18½ foot the PFAS must be used as a positioning device not allowing a fall at all or minimizing the fall to 2 (two) feet.

E Light will supply personal fall protective equipment. The fall protection equipment will be assigned to each Supervisor per site. The personal fall protection equipment comes in kits. There are two types of kits at E Light

Bag, harness, 6 ft. lanyard, tie off strap

Bags, harness, 2 ft. lanyard attached to a rope grab 30 ft. or 50 ft. rope, and a tie off strap. (Some cases retractable lanyards, which are positioning devices.)

- **Donning of Harness**

Supervisor will instruct employees on donning and removal of the Safety Harness and personal fall protection.

Grasp the harness by the back D ring, lifting the harness up in the air; grasp the left shoulder strap with left hand. Put left shoulder strap over left shoulder continue with right strap and right shoulder. Grasp chest straps snug not tight, leave at least two to three fingers between the strap and chest.

Reach for leg straps connect, secure and snug up. Adjust all straps until comfortable. Leave two to three fingers between strap and legs.

- **Removal of Harness**

Unlatch all straps and connections, slip off over shoulders, grasp back D ring, and stow.

- **Maintenance of Harness**

Harness should be kept clean. If exposed to oils, greases or other products clean off with a soapy rag, or immerse all parts in warm water solution, use any available detergent. Parts should be scrubbed gently and rinsed thoroughly. Hang up by back D ring to air-dry. Contact your supervisor with any questions about any replacement parts.

- **Storage of Personal Fall Protection**

All personal fall protection should be stored in the bag and/or kept in a clean dry area. Recheck equipment before each use, your life may depend on it!

- **Limitations**

OSHA enforces that an employee cannot fall over six feet. Personal Fall Arrest System must be used as a positioning device under 18 ½ feet. A positioning device shall be rigged such that an employee cannot free fall more than (2) two feet.

Reasoning: The harness D ring is 5 ft. from the ground, lanyards can be 6 ft. in length, (5+6=11 ft.) and Shock absorbers expand from the fall up to 3 ½ ft. (11+3½ =14 ½ ft.) the rope will expand up to 2½ ft. on a 30 ft. rope and on a 50 foot rope will expand up to 3 ½ ft. (14½+3½= 18 ft.) and lastly the tie strap or anchor point will fold or give up to ½ ft. equaling a total clear distance needed 18 ½ ft.

Employees need to understand that with a rope and rope grab, if not kept snug or if employee allows too much slack an employee can fall over the six feet. Employees need to understand that they must keep the rope grab snugged up as not to allow more than six feet of slack in the rope above 18 ½ ft.

SAFETY MONITORING SYSTEM

(Normally used on roofs under 50 ft. wide and when work is to be completed between the control lines and roofs edge.)

A safety monitoring system means a fall protection system in which a competent person is responsible for recognizing and warning employees of fall hazards. The duties of the safety monitor are to:

- Warn by voice when approaching the open edge in an unsafe manner.
- Warn by voice if there is a dangerous situation developing which cannot be seen by another person involved with product placement, such as a Roof Top Equipment getting out of control.
- Warn employees when they appear to be unaware of a fall hazard or are acting in an unsafe manner.
- Be on the same walking/working surface as the monitored employees and within visual sight and be close enough to communicate with the employees.
- Note: Some GCs requires the use of a High Visible Vest on the safety monitor.

CONTROL ACCESS ZONE

A controlled access zone means an area designated for leading edge and other operations are taking place in a controlled access zone. Where work may take place

without the use of guardrail, safety net or personal fall arrest systems to protect the employees in the area. Control zone systems shall comply with the following provisions:

- **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. The control line must be erected not less than 6 ft. but not more than 25 ft. from the unprotected or leading edge.
- **The controlled access zone has been communicated through one of the following:**
 - **Control Lines:** There are two types of control lines outlined here:
 - As outlined in STD 3.1A (residential fall protection) a control line maybe a painted line 6 ft. from the edge, walking or working surface.
 - A control line maybe wire, rope, tapes, or equivalent materials at least 200 lbs. strong, supported by stanchions, and flagged every 6 ft., and shall be rigged not to sag less than 39 inches but not be higher than 45 inches tall, installed 6 ft. from the edge or fall hazard.
 - Communicated to all employees by a safety meeting and plans of the area given out with the area marked in a safety color.
 - Communicated to all employees through a special meeting and the area marked off in some form, example with paint, tape, ropes, wire or signs.
 - Communicated to all employees through chain of command and the area marked off or plans given out to ensure only authorized employees will be allowed into the CAZ.
- Control lines may also be used they are:
 - Made of wire, rope, tapes, chains, and in some cases paint
 - If wire, ropes, tapes are used **must be 200 lbs. strong**, (less than a warning line of 500 lbs.)
 - Be flagged every 6 ft. with high visible material
 - Can be mounted on stanchions, each stanchion must hold 16 lbs. of force to be knocked over.
 - The rope cannot sag less than **39 inches** but cannot be higher than **45 inches**. (Higher than a Warning line)
- This option of control lines is outlined in STD 3.1A and in subpart M and is made part of this fall protection plan. Since the type construction and the trades are normally the same and do the same job.
- When employees must work between the control line and the edge, Personal Fall Arrest Systems (PFAS), Safety Monitor Systems (SMS) or Guardrails can be used.
- Employees have been instructed of the hazards and the employees to enter the CAZ have no other duties to perform other than the ones in the CAZ.

- The Supervisor as the competent person is to oversee the operations in the controlled access zone. The Supervisor shall have the power to change enforce, modify or do whatever is necessary to ensure the task is completed as safely as possible, they are also knowledgeable of the type of work to be performed.

SCAFFOLDING

The fall protection standard for scaffolding requires guardrails or fall protection at 10 ft. subpart L. It will be our policy to require and use the guardrails as a normal routine. However in some cases such as erection and dismantling the scaffolding, only supervised (qualified and trained) employees will be allowed to assemble or disassemble the scaffolding. Seldom will PFAS be used on scaffolding unless it is in hoisting areas. Falling object protection also starts at 10 ft., a standard guardrail consist of top-rail at 42" and mid-rail at 21" with at least a 3½ inch toe board.

RESIDENTIAL CONSTRUCTION

OSHA Directive STD 3-0.1A supersedes the requirements of the standard and Appendix E if the Construction Company meets the definition of "Residential Construction." STD 3-0.1A modifies the requirements; it permits employers engaged in certain residential construction activities to use alternative procedures routinely instead of conventional fall protection. No showing of feasibility of conventional fall protection is needed before using these procedures. A fall protection plan is required but does not have to be written, nor does it have to be job specific. Other subparts have not be effected, such as but not limited to scaffolding, electrical, ladders, hand and power tools and other safety and health issues. Group Three activities are what we fall under as electricians, it states; all workers must be:

- Trained qualified workers
- Must have materials staged and adequately supported.
- Be able to change tasks, or stop work due to bad weather (wind, snow, lightning, rain etc.)
- Have no Impalement hazards.
- Be supervised by a competent person
- For specific details see STD 3.01-A along with M-2 under www.osha.gov directives and Interps.

Standard guardrails for residential construction

Framed stud walls 19 inches or less on center (OC) in lieu of guardrails as outline by subpart M. are acceptable for fall protection at outside floor perimeter locations only. Wall openings (windows, doors) require standard guardrails. Rails must be set after the wall has been secured into place.

HOLES

Any opening in a walking or working surface 2 inches or greater that a person could trip, fall into or through, must be protected by personal fall protection, covers, or guardrails. All covers must be secured from displacement and marked "Hole" in a safety color.

Stairwells and mechanical chase openings

Interior stud walls around floor opening if 19 inches or less between studs are considered protected. If the interior stud walls are more than 19 inches between studs they shall not be considered appropriate. Standard guardrails or covers must be installed completely around the opening.

Attics

Only trained workers, materials and equipment shall be located conveniently close. Restricted access in the attic and below, where the work is being performed.

Each contractor has the option of creating a fall protection plan if they do not wish to follow subpart M or STD3.1A. The requirements for a fall protection plan are outlined with examples in subpart M of the OSHA standards, (can use STD 3.1 A as an example), along with the training requirements.

ENFORCEMENT

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. Failure to follow the fall protection guidelines will result in disciplinary warnings, and may include termination.

FEASIBILITY / AREAS THAT CREATE A GREATER HAZARD

In some cases the installation of guardrail creates a greater hazard, due to:

- The exposure of the employees to install them.
- In cases where they get in the way of the construction taking place, and employee can get caught between or can't control material handling.
- Exposure when removal of the rails, exposes an employee to a greater hazard than other options
- Can't safely install them to hold 200 lbs. (Do not create a greater hazard with a false sense of security, just to look good)
- Guardrails create damage to construction taking place i.e., floors, roofs, steps, etc.
- Guardrails create a greater hazard by being in the way of work taking place such as installation of ductwork, wiring, piping etc., where material-handling equipment will be used. If in the way they may be destroyed by the process or create additional hazard to the employees by causing them limited room to work, lifting materials and objects over or just plainly not reinstalled after removed to move in materials or equipment.

In some cases Personal Fall Arrest Systems creates a greater hazard, due to the following:

- Falling will cause a swing hazard into objects, walls, windows etc. Obstructions or impact injuries (outline appendix C)
- The lack of a good anchorage point (again do not create a false sense of security.)
- Tripping hazard from/on the ropes.

- Ropes get caught in moving equipment, material handling or rigging.
- Anchor points too far away to do any good
- Ropes pass over sharp edges
- Ropes create a falling object hazards
- Tie off points not strong enough to hold (appendix C)
- Anchor points create damage to construction i.e.: roofs, trim, curbs, glass etc.

Control lines will be used in areas to keep workers from being exposed to the edge or floor holes, when guardrails or PFAS can't be used.

The idea is to keep the workers from being exposed to the fall hazard and keep them back from the edge at least 6 ft. Roof top units normally are 10 ft. from the edge with the use of a control line this gives the roofer, steel worker, painters, HVAC and Electrical workers etc. 6 ft. back from the hazard and a 4 ft. wide work area, as work can be completed safely. In some cases holes are cut into roofs, floors and etc. to run wires, pipe, ductwork etc., these can also be effectively protected with the use of control lines. Control lines may also be used to barricade off areas where the work taking place in the controlled area may create other hazards such as welding operations, certain classes asbestos abatement, grinding operations, elevators being installed, X-raying is taking place. In some cases additional signage may be used to warn of the hazard.

ACCIDENT INVESTIGATIONS

All accidents that result in injury to workers, regardless of their nature, shall be investigated and reported. It is an integral part of any safety programs that documentation takes place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident occurring, this training plan shall be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

CHANGES TO PLAN

A Program Coordinator or the Loss Control Manager will approve any changes to the plan. A qualified person as the job progresses to determine if additional practices, procedures or training needs to be implemented by the competent person to improve or provide additional fall protection shall review this plan.

Workers shall be notified and trained, if necessary, in the new procedures or changes.

Note: Changes, modifications do not have to be in writing.

EMERGENCIES

- In case of an emergency the supervisor should call or appoint a person to call 911. Always stay on the line until the 911 operator hangs up first. Give clear instructions of the location, nature of the accident, any equipment needed, and

any other pertinent information the operator may ask. Any accidents or incidents must be reported to E Light within 12 hours by the means of an accident report.

- If an employee has fallen and is hanging by the lifeline, there are several ways to reach the employee to get him / her down. The following is a list of some of the ways:
 - Place a scaffold under the employee.
 - Use two A frame ladders and build a scaffold under the employee.
 - Use a fork truck and a man basket and place it below the employee.
 - Pull the employee back up as a last resort.

ITEMS TO REMEMBER:

Try not to cut lanyard, don't do any further harm or damage. Try not to move employee unless he or she is in more danger, always try to build a platform under employee, always have plenty of help. USE YOUR PERSONAL PROTECTIVE EQUIPMENT. Replace the employees Harness and Lanyard they cannot be used again.

References:

29 CFR 1926 subpart M and Appendix A through E

29 VFR 1926 subpart L

STD 3-0.1A

Interps: M-2, and Troxell letter.

The thought process of STD 3.1A and appendix's were used to create this plan. The residential Fall Protection standard can be found on the Web at www.osha.gov and look under directives.

FALL PROTECTION PROGRAM TRAINING RECORD

I certify that I have received a training of this fall protection program. I understand the hazards associated with falls. I received my copy of the fall protection training program and training over the fall protection program on the below date. I understand that I am responsible for Personal Fall Protection Equipment and for maintaining my personal fall protective equipment; I also understand that if any questions arise that I am to contact my supervisor immediately.

NAME: _____ **Date:** _____

SUPERVISOR OR INSTRUCTOR: _____ **Date:** _____

NOTE: Send a copy to main office to be maintained in employees file and maintain a copy on the site or at the job trailer.