**FALL PROTECTION**

Piedmont Service Group (PSG) realizes that in our industry there is still the need to work at heights whether it is inside the building or on the roof. We do know that with training, proper Job Hazard Analysis and use of the correct fall protection system, this work can be done safely. We are dedicated to this endeavor.

The standards we abide by, but not limited to:

For our construction personnel- CFR 1926 Subpart M (Fall Protection).

For our service personnel- CFR 1910 Subpart D (Walking Working Surfaces).

All personnel exposed to a fall hazard will have documented training. If there is a near miss or an incident, it will be investigated to identify and mitigate the root cause(s) and retraining will occur. Our construction projects will have a documented site specific fall protection plan drafted by a qualified person for that project. For our service work, each worker will identify the type of fall hazard/controls they are using with the Job Hazard Analysis tool. All Fall Protection Equipment will meet the most current ANSI Standards.

**Duty to Have Fall Protection**

It is the responsibility of PSG to ensure workers are protected from the hazard of falls whenever work is being completed at heights of six feet (6’) or greater (4' for our service personnel) measured from the work platform to the bottom of the sole of the foot. All workers potentially exposed to fall hazards must be trained in recognition of those hazards as well as any applicable fall protective systems and then are required to use them. The six-foot rule (4'-service work) applies, but is not limited to the following conditions:

• Unprotected sides and edges

• Leading edges

• Holes

• Ramps, runways and other walkways

• Excavation and trenching

• Dangerous or large pieces of equipment

• All roof work, unprotected skylights, roof access hatches

• Wall openings

• Walking & working surfaces

• Floor openings

• Scaffolding erection/dismantle

• Aerial Lifts/Scissor Lifts

• Fixed Ladders 24' or higher

• Any additional fall protection circumstance that may be deemed necessary by PSG

**Fall Protection Systems**

• Guardrail Systems

• Personal Fall Arrest Systems

• Fall Restraint Systems

• Positioning Device Systems

• Warning Line Systems (Roofing Only)

• Controlled Access Zones/Designated Area

• Safety Monitoring System

• Covers

• Protection from Falling Objects

• Fall Protection Plan

***Guardrail Systems***

* Top edge height of top rails or equivalent guardrail system members, shall be 42 inches plus or minus 3 inches above the walking/working level. They will consist of a top rail, mid rail and a toe board.
* Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.

***Personal Fall Arrest Systems***

* Harness and Shock Absorbing Lanyard
* Vertical Life Lines/Horizontal Life Line
* #5,000 Anchor Point or 2X the intended load
* Attach Anchor Points as high as possible to limit the free fall distance

## ***Fall Restraint Systems***

• Full Body Harness

* Self-Retracting Lanyard SRD/SRL
* Restraint Lanyard

## ***Positioning Device Systems***

## ***•*** A positioning device system is a fall harness system rigged to allow a worker to be supported on an elevated, vertical surface (i.e., wall or formwork) and work with both hands free, while leaning.

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## • This system must be worn in conjunction with a personal fall arrest system.

• Positioning devices should not be rigged such that a worker cannot free fall more than two (2) feet.

• Anchorage points should capable of withstanding twice the impact of a worker’s fall or 3,000 lbs., whichever is greater.

Our work is considered infrequent and temporary so a designated area on a roof can be used. This is not comprehensive but shows what we will normally do (Service Work):

• **0'-6' from an edge, opening**, **unprotected skylight or roof hatch.** The use of a guardrail or worker will use a harness, an appropriate SRD/restraint lanyard attached to an approved anchor point.

• **6'-15'** **from an edge, opening**, **unprotected skylight or roof hatch.** The use of a designated area marked with a warning line is acceptable in addition to the above.

• **15'+** **from an edge, opening**, **unprotected skylight or roof hatch.** All workers in this area are required to be trained as the hazards and understand when a warning line, guardrail or to be tied off is required.

• **Pulling up tools and materials.** This must be done in harmonywith the requirements above.

• **Skylights.** Skylights will be treated as an open hole unless the skylight specifically states it can support at minimum #500. They can be barricaded, covered, avoided (15' away) or the worker can tie off to an approved anchor point when working near them.

• **Roof Access Hatches.** A guardrail system is needed to protect the workers from falling and also to assist with entry and exit. Hatches can be closed to eliminate the hazard.

• **Parapet Wall.** If a parapet wall is at least 39" tall, it is compliant. Up to your belly button.

• **Fixed Ladder 24' or taller.** Fall protection is required. SRDs, travel systems, cages (until 2036), are acceptable.

***Warning Line Systems 1926***

This system contains more detail because of its frequent use. The 1926 regulations (construction) are:

•[**1926.502(f)(1)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(f)(1))The warning line shall be erected around all sides of the roof work area.

**•1926.502(f)(1)(i)** When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge.

**•1926.502(f)(1)(ii)** When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

**•1926.502(f)(1)(iii)** 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.

**•1926.502(f)(1)(iv)** 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.

**•**[**1926.502(f)(2)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(f)(2))Warning lines shall consist of ropes, wires, or chains and supporting stanchions erected as follows:

**•1926.502(f)(2)(i)** The rope, wire, or chain shall be flagged at not more than 6 foot (1.8 m) intervals with high-visibility material;

**•1926.502(f)(2)(ii)** The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.9 m) from the walking/working surface and its highest point is no more than 39 inches (1.0 m) from the walking/working surface;

**•1926.502(f)(2)(iii)** After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 N) applied horizontally against the stanchion, 30 inches (.8 m) above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;

**•**[**1926.502(f)(2)(iv)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(f)(2)(iv))The rope, wire, or chain shall have a minimum tensile strength of 500 pounds (2.22 kn), and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph (f)(2)(iii) of this section; and

**•1926.502(f)(2)(v)** 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.

**•1926.502(f)(3)** No employee shall be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.

**•**[**1926.502(f)(4)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(f)(4))Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

***Work on low-slope roofs***

This system contains more detail because of its frequent use. The 1910 regulations (Service/Maintenance work) are:

**•1910.28(b)(13)(i)** When work is performed less than 6 feet (1.6 m) from the roof edge, the employer must ensure each employee is protected from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system.

**•1910.28(b)(13)(ii)** When work is performed at least 6 feet (1.6 m) but less than 15 feet (4.6 m) from the roof edge, the employer must ensure each employee is protected from falling by using a guardrail system, safety net system, travel restraint system, or personal fall arrest system. The employer may use a designated area when performing work that is both infrequent and temporary.

**•1910.28(b)(13)(iii)** When work is performed 15 feet (4.6 m) or more from the roof edge, the employer must:

**•1910.28(b)(13)(iii)(A)** Protect each employee from falling by a guardrail system, safety net system, travel restraint system, or personal fall arrest system or a designated area. The employer is not required to provide any fall protection, provided the work is both infrequent and temporary; and

**•1910.28(b)(13)(iii)(B)** Implement and enforce a work rule prohibiting employees from going within 15 feet (4.6 m) of the roof edge without using fall protection in accordance with paragraphs (b)(13)(i) and (ii) of this section.

**•1910.29(d)(1)** When the employer uses a designated area, the employer must ensure:

**•1910.29(d)(1)(i)** Employees remain within the designated area while work operations are underway; and

**•1910.29(d)(1)(ii)** The perimeter of the designated area is delineated with a warning line consisting of a rope, wire, tape, or chain that meets the requirements of paragraphs (d)(2) and (3) of this section.

***Warning Line Systems 1910***

**•1910.29(d)(2)** The employer must ensure each warning line:

**•1910.29(d)(2)(i)** Has a minimum breaking strength of 200 pounds (0.89 kN);

**•1910.29(d)(2)(ii)** Is installed so its lowest point, including sag, is not less than 34 inches (86 cm) and not more than 39 inches (99 cm) above the walking-working surface;

•**1910.29(d)(2)(iii)** Is supported in such a manner that pulling on one section of the line will not result in slack being taken up in adjacent sections causing the line to fall below the limits specified in paragraph (d)(2)(ii) of this section;

**•1910.29(d)(2)(iv)** Is clearly visible from a distance of 25 feet (7.6 m) away and anywhere within the designated area;

**•1910.29(d)(2)(v)** Is erected as close to the work area as the task permits; and

**•1910.29(d)(2)(vi)** Is erected not less than 6 feet (1.8 m) from the roof edge for work that is both temporary and infrequent, or not less than 15 feet (4.6 m) for other work.

**•1910.29(d)(3)** When mobile mechanical equipment is used to perform work that is both temporary and infrequent in a designated area, the employer must ensure the warning line is erected not less than 6 feet (1.8 m) from the unprotected side or edge that is parallel to the direction in which the mechanical equipment is operated and not less than 10 feet (3 m) from the unprotected side or edge that is perpendicular to the direction in which the mechanical equipment is operated.

***Safety Monitoring System***

This system, if used, will only be as a last resort. If used we will comply with [**1926.502(h)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(h))

***Covers***

***•***[**1926.502(i)(1)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(i)(1))Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.

**•**[**1926.502(i)(2)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(i)(2))All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment and materials that may be imposed on the cover at any one time.

**•**[**1926.502(i)(3)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(i)(3))All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment or employees.

**•**[**1926.502(i)(4)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(i)(4))All covers shall be color coded or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

***Protection from Falling Objects***

Toe boards, netting, barricading the area below are all acceptable means of protecting the workers. A combination of these may be required depending on the Job Hazard Analysis. All dangerous areas will be barricaded to stop unauthorized access.

***Fall Protection Plan***

This may be used as a last resort if it has been proven through the JHA that it is the only option available. If so, we will comply with [**1926.502(k)**](https://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_unique_file=1926_0502&src_anchor_name=1926.502(k))

***Scissor Lifts/Aerial Lifts***

It is PSG's policy to use fall restraint in all aerial lifts. This will be a full body harness with a SRD designed to connect at foot level.

***Fixed Ladders***

All ladders 24' or higher will have a ladder safety system or fall arrest system by Nov 19, 2018.

All ladders installed after Nov 19, 2018 will have these system installed. PSG employees will be trained and then use these systems.

**Equipment Inspections**

• All components of the fall protection system to be inspected before each use.

• All annual/semi-annual inspections by a competent person to be documented.

• If any equipment is found to be damaged, it will be removed from service immediately.

• The service life of the equipment will be determined by the manufacturer.

**Rescue Plan**

For any task where a Fall Arrest System is used, leading edge work or the possibility of a free fall is present, a documented rescue plan will be in place.

This will include, but not limited to:

• This can be included on the Job Hazard Analysis.

• The phone number of the person or resource for the rescue.

• For an offsite rescue resource, they need to be pre contacted.

• The type of rescue. Tools to be used.

• Trauma relief straps provided for all exposed to a fall.