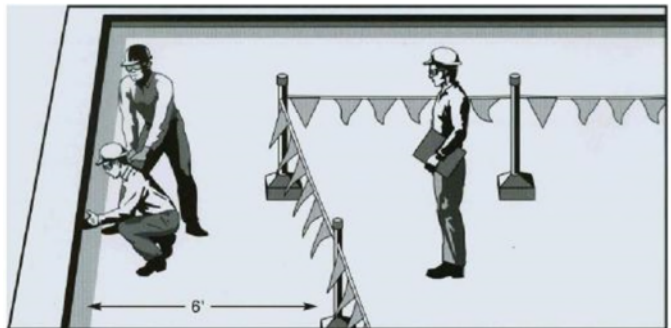


To protect workers on roofing jobs, Climate Engineers has identified the hazards present and take to address them. This guide covers safe practices to prevent falls, other physical injuries, hazardous substance exposures, and injuries and illnesses related to environmental conditions.

The following should be used as guidelines for the roof safety policy:

1. All persons using fall arrest systems must be properly trained in the use and inspection of these systems. OSHA §1926.503
2. All personnel have been informed of any/all potential hazards in the area or the roof (i.e. weather, electrical, slippery conditions, etc.).
3. Utilize the correct pre-job assessment form provided by Climate Engineers. This should help the affected workers identify potential hazards of the area. Some facilities require a fall protection/working at heights permit to be completed before any fall arrest system is utilized or any roof work commenced (i.e. Nestle Purina).
4. Always use your pre-job assessment, weather conditions, and common sense when determining if roof conditions are safe. If you are unable to decide, contact your foreman or site safety manager. Do not proceed with any work until a decision has been made.
5. If electrical hazards exist, identify source and use lock out/tag out. Always fill out the correct lock out/tag out form.
6. Ladders – If you need to use and are alone, have someone from the site spot you (i.e. maintenance personnel, site contact, etc.). Always tie extension ladders off at the top when you initially go up. Be sure the ladder meets requirements of the 4:1 rule, is in good working condition, and extends at least 3 rungs/3 feet above the roof edge/point of egress.
7. When using 4, 6, or 8 foot stepladders on roofs to access roof top units or roof equipment, identify a sturdy section of unit to tie off the ladder. This will eliminate potential tipping of the ladder during climbing, working on, or during the mounting/dismounting ladder.
8. Use barricades when they make sense.
9. Procedures for flat/low slope roof work. OSHA §1926.501(b)(10)
 - Minimum distance from the ledge of the roof/building should be greater than 6 feet. You should carry retractable & strap to tie to a designated anchor point. Lifting eyes on rtu's in most cases are acceptable.
 - When working on a flat or low slope roof (less than 18 degrees), the safe distance to unprotected roof edges, unguarded skylights, translucent panels, or any unprotected roof penetration is 15 feet.
 - Prior to beginning work activities a “warning line” shall be used to mark the 15 foot safe distance.

1. “Warning line” is defined as a barrier erected on a roof to warn employees of an approaching fall hazard. The warning line shall consist of ropes, wires, or chains. The warning line should be marked with a highly visible material at 6 foot intervals. The warning line shall extend between 34 – 39 inches

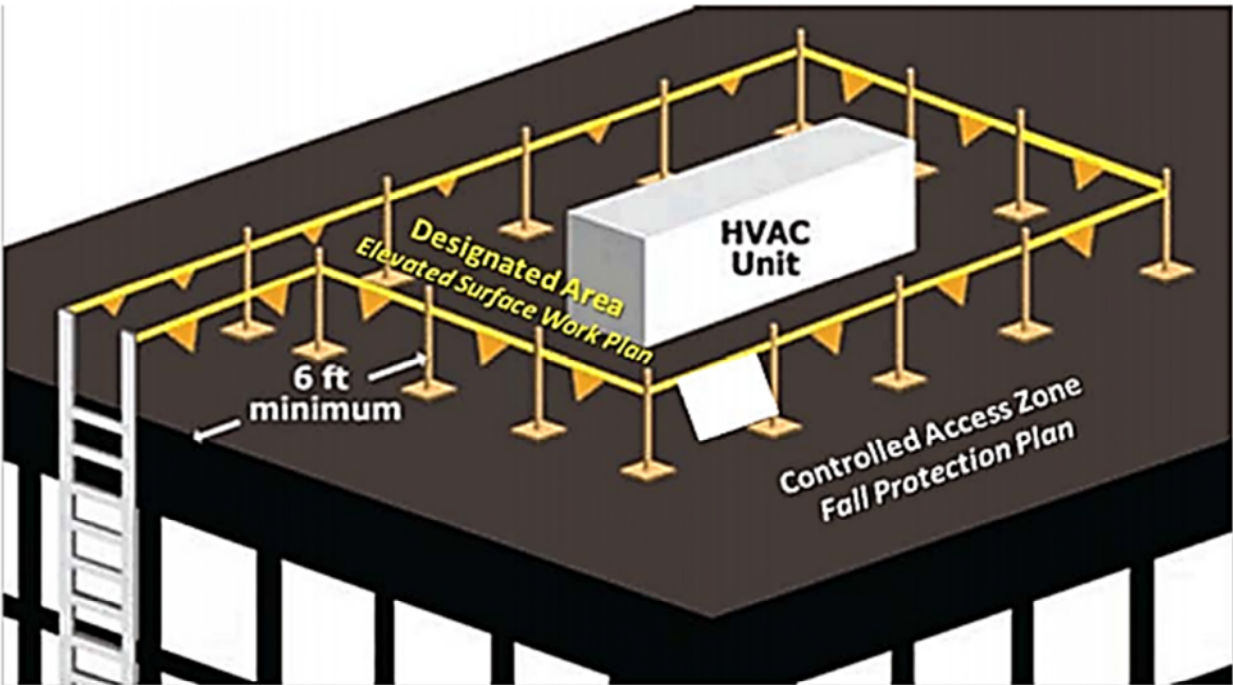


OUR GOAL IS ZERO INJURIES IN THE WORKPLACE

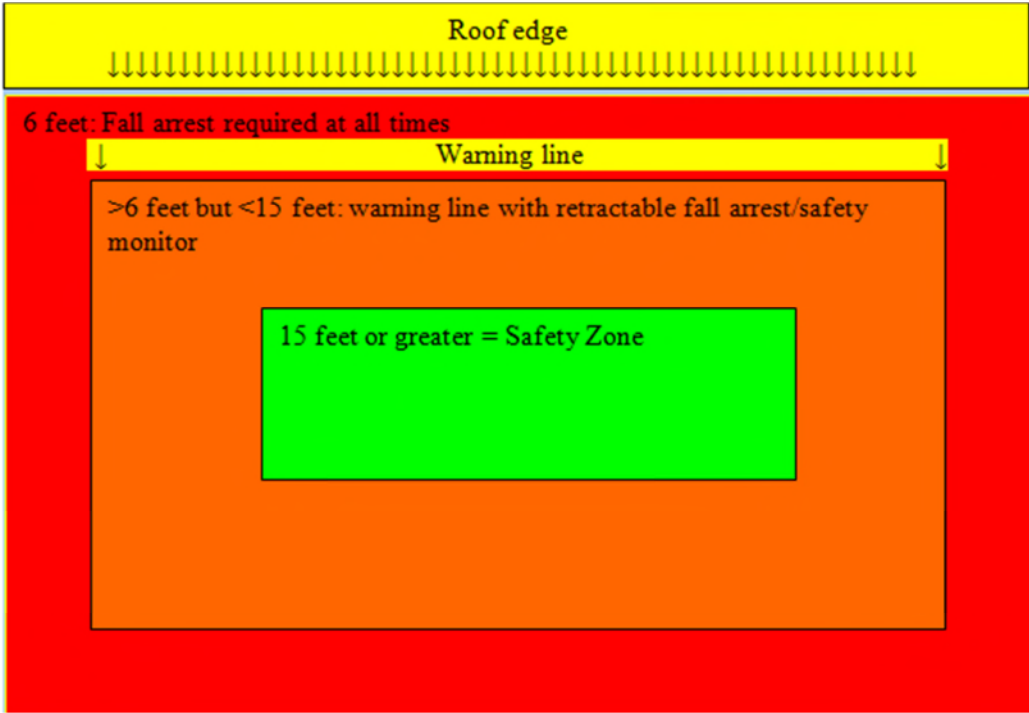
above the working/walking surface. The warning line shall extend the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected of leading edge. When mechanical is being used, the warning line must be erected no less than 6 feet from the roof edge parallel to the direction of the mechanical equipment operation and no less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation. The supporting poles and warning line shall be capable of resisting, without tipping, a force of at least 16 pounds.



2. OSHA §1926.502(f)(2) covers the erection procedures of the warning line. Contact your Safety Rep or Foreman for this information.
 3. The warning line IS NOT AN ACCEPTABLE tie off or anchor point.
- Where applicable or conditions require, use a Safety Monitor to watch or help maintain the safe distance of 15 feet.
 1. A Safety Monitor is someone:
 - Competent in the recognition of fall hazards
 - Capable of warning workers of fall hazards and detecting unsafe practices
 - Located on the same walking or working surfaces of the workers and can see them
 - Close enough to the work operations to communicate orally with workers and has no other duties to distract from the monitoring function
 - On distances greater than 6 feet but less than 15 feet from building edge a personal fall arrest system (retractable) with a warning line should be used. Also a Safety Monitor can also be used when applicable.
 - On distances less than 6 feet from the building edge a personal fall arrest system must be utilized. Also, it would be a good idea to have another person present when working in this zone. If another person is unavailable, notify your foreman and safety manager prior to performing work in this zone.
 - Use the graph below as a guide for flat or low slope roofs.



- Control Line Requirements**
- Erected not less than 6' nor more than 25' from leading edge
 - Extend entire length of leading edge
 - Be flagged or otherwise clearly marked at not more than 6' intervals
 - Supported so the lowest point is not not less than 39" or more than 45"
 - Have a minimum breaking strength of 200 lbs.
 - Minimum stanchion knock over strength of 16 lbs.



OUR GOAL IS **ZERO** INJURIES IN THE WORKPLACE

10. Procedure for sloped roof (4-12 pitch or >18degrees) is as follows. Each person working on a steep roof with unprotected sides and edges 6 feet or more from lower levels shall be protected from falling by guardrail systems with toe boards, safety net systems or a personal fall arrest system. OSHA §1926.501(b)(11).

11. OSHA Regulations listed below.

- §1926.502(d) : Effective 01/01/1998 , body belts are not acceptable as a part of a personal fall arrest system. NOTE : The use of a body belt in a positioning device system is acceptable and is regulated under OSHA §1926.502(e).
- §1926.502(d)(12) : Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a tensile load of 3000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- §1926.502(d)(13) : Self-retracting lifelines or lanyards which do not limit free fall distance to 2 feet or less, rip-stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5000 pounds applied to the device in the fully extended position.
- §1926.502(d)(15) : 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 5000 pounds per employee attached.
- §1926.502(d)(16)(iii) ; Be rigged such that an employee can neither free fall more than 6 feet, nor contact any lower level.
- §1926.502(d)(19) : Fall arrest systems and components subjected to impact loading shall be immediately removed from service and not be used again.
- §1926.502(d)(21) : Personal fall arrest systems shall be inspected prior to each use for wear, damage, or other deterioration. Defective components of any fall arrest system shall immediately be taken out of service.
- §1926.502(d)(23) : Personal fall arrest systems shall not be attached to a guardrail system.

12. Any and all regulations concerning the aforementioned material can be found in Subpart M – Fall Protection.

13. If ever in doubt about personal fall arrest systems, anchorage points, or roof safety guidelines, don't hesitate to contact your Climate Safety Manager. They will be able to assist you in making the proper, safe decision when concerning these and other/all safety related matters.



ROOF SAFETY PRE-JOB HAZARD ASSESSMENT

Job or Project Name: _____
Inspector (name): _____

Date of Inspection: _____
Signature: _____

Please circle your response to each question.

1. Roof area inspected for Safety Hazards which includes electrical dangers

Yes No N/A
 2. Completed Lockout/Tagout Form

Yes No N/A
 3. Caution tape or barricades placed around the work area - minimum distance from the edge 6 Feet.

Yes No N/A
 4. Choosing an anchorage point: must be capable of supporting without failure 5,000# IF using a Lanyard or 3,000# IF using a retractable. Always tie off above your working area if possible to limit fall distance/reduce swing. Only pipes 6 inches in diameter or larger can be used and if tying to sharp object and precautions s/b taken to eliminate cutting action. Use a shackle and a unit lifting eye if possible.

Yes No N/A
 5. Use the retractable when you are a short distance from the ground rather than a 5 or 6 foot lanyard. This will keep someone if they fell from hitting the ground. Does this jobsite meet the criteria to use a retractable?

Yes No N/A
 6. Fall PPE: Can use lanyards for restraint purposes if less than 6 ft (this device is a warning) which can hold about 200#. Does this jobsite meet the criteria to use a lanyard?

Yes No N/A
 7. Fall PPE: Is this job 6 ft or above? Then you must use Full body harness.

Yes No N/A
 8. Did you properly inspect your Full Body PPE? Color codes as follows: Red-1st Qtr, White-2nd Qtr, Orange-3rd Qtr, Green-4th Qtr.

Yes No N/A
 9. Ladders: All ladders 8ft and above s/b tied off. Extension ladders must be held at their base by a second person while the first person climbs the ladder to tie it off. This includes last trip down untying the ladder at the top – if it cannot be feasibly tied off then it can be held at the base by the second person during the ladder use. Do you need to use a ladder at this jobsite?

Yes No N/A
- Which type of ladder do you need? 8Ft or less or Extension

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