

Clarksville-Montgomery County School System  
**FALL PREVENTION/  
FALL PROTECTION PROGRAM**  
OSHA Standard - [29 CFR 1910](#) ; [29 CFR 1926](#)

**1.0 PURPOSE**

The purpose of the Fall Prevention/Fall Protection Program is to address fall hazards through their elimination and control. The majority of this document contains interpretation and requirements of the OSHA 1910 and 1926 standards. Training on this information is the purpose of the training package for Fall Prevention/Protection.

**2.0 DEFINITIONS**

**Attend** - to watch and warn others of a hazard, i.e. someone attending a temporary floor opening or hole is an option for fall prevention instead of guarding with standard railing or to keep activities or traffic away from an area where a portable ladder is being used instead of using barriers.

**Competent Person** - one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

**Fall Prevention** - same level barrier to a fall hazard to prevent a fall, i.e., guard rails, covers, walls, floors, scaffolds.

**Fall Protection** - a back-up to one's balance in protecting one where a fall hazard exists. Typically this consists of PPE, i.e., fall arrest systems of anchorage, body harness, and connectors.

**Floor Hole** - an opening measuring less than 12 inches but more than 1 inch in its least dimension through which materials may fall, but through which persons may not fall.

**Floor Opening** - an opening measuring 12 inches or more in its least dimension through which a person may fall.

**Low-Slope Roofs** – flat roofs and roofs with slope less than 4 in 12 (vertical to horizontal)

**Ladder Stand (portable stair)** – A fixed height self-supporting ladder consisting of wide flat treads in the form of steps accessing a top step. The assembly may include handrails, and is intended for use by one person.

**Ladder Stand Platform (portable platform)** – a fixed height self-supporting unit having one or more standing levels, provided with means of access or egress to the platform or platforms. The assembly may include handrails and / or guardrails.

**Lanyard** - a flexible line of webbing, rope, or cable that may be 2, 4, or 6 feet long, and used to secure a full body harness to a lifeline or an anchorage point.

**Lanyard, Retractable** - 5-20 feet in length and allows unrestricted vertical movement paying out automatically. If the user falls (4 ft/sec), an internal locking device engages.

**Lanyard, Shock Absorbing** - a flexible line of webbing, rope, or cable used to secure a full body harness to a lifeline or an anchorage point that has an integral shock absorber.

**Lifeline, horizontal** - a rail, rope, wire, or synthetic cable that is installed between two anchorages and used for attachment of a worker's lanyard for more mobility in working. These lifelines MUST be engineered.

**Lifeline, Retractable** - 20-320 feet in length and allows vertical movement paying out. If the user falls (4.5 ft/sec), the device automatically locks to arrest the fall.

**Maximum Arresting Force (MAF)** – the peak force exerted on the fall arrest system or employee when stopping a fall. OSHA's limit on a person is 1,800 pounds in a full body harness.

**Qualified Person** - one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

**Roof Hole** - a hole in a roof that is 2 inches or more in its least dimension.

**Roof Work** - repair, maintenance, or construction work. Roof work does not apply to employees making an inspection, investigation, or assessment of workplace conditions prior to the actual start of the job or after all of the work has been completed.

**Safety Monitor** - (Used at only upon approval from the Departmental Supervisor and appropriate Departmental Manager) a *competent person* designated to monitor the safety of other employees and shall be competent to recognize fall hazards, warn employees of fall hazard or if acting in an unsafe manner. The monitor must be on the same walking/working surface and within visual sight of employees being monitored and close enough to verbally communicate with the employees. The monitor shall not have other responsibilities while monitoring.

**Standard Railing** - a vertical barrier to prevent falls of persons. Existing railing consists of a top rail with a height of 42 inches and an intermediate rail mid-height. Top rail must have the strength to withstand at least the minimum requirement of 200 pounds applied within 2 inches of the top edge of the rail in any downward or outward direction not deflecting to less than 39" height. The intermediate rail shall be capable of withstanding a force of at least 150 pounds applied in any downward or outward direction. No more than 21 inches shall exist between intermediate rail and the top rail or the top of the toe board.

**Steep-Slope Roofs** - roof with slope greater than 4 in 12 (vertical to horizontal)

**Supported scaffold** - one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

**Suspension scaffold** - one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

**System scaffold** - a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

**Toe board** - a 4 inch nominal vertical barrier secured not more than one-quarter inch clearance above floor or platform level to prevent falls of people or materials to level below.

**Warning Line System** - a barrier erected on a roof (not closer than six foot from an edge) to warn employees that they are approaching an unprotected roof side or edge. This designates an area in which roofing work may take place and an access path from the roof access point to the work area without the use of railing or fall protection. Consists of ropes, wires, or chains and supporting stanchions flagged at not more than 6 foot intervals with high visibility material. The lowest sag no less than 34 inches and the highest point no more than 39 inches and capable of

resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion. Rope, wire, or chain must have minimum tensile strength of 500 pounds.

### **3.0 TEMPORARY HOLES/ FLOOR OPENINGS (not on roofs)**

If the depth of the *floor opening* or *floor hole* is greater than or equal to six feet, fall protection must be used if working around the opening inside the guarded area.

All excavations, temporarily open *floor holes*, and *floor openings* in any walking / working surface shall be addressed using one or more of the following in this order of priority:

- Eliminate - If temporarily covered, the cover shall be secured or installed in a manner to prevent accidental displacement by wind, equipment, or employees. The cover shall be capable of carrying two times the maximum intended load and shall be identified with large letters as "HOLE" or "COVER".
- Guard with *standard railing*
- Have a person *attend* the hole or opening.

The person(s) creating the floor hole or floor opening are responsible for implementing the preventative measure.

### **4.0 TEMPORARY DIFFERENT LEVEL FALL HAZARDS GREATER OR EQUAL TO SIX FEET**

All temporary different level fall hazards greater or equal to six feet (i.e. climbing) shall be addressed using one or more of the following in this order of priority:

- Eliminate
- Fall Protection

### **5.0 WALKING / WORKING SURFACES**

Any permanent walking / working surface exposed to a different level fall hazard of four feet or greater shall be addressed by elimination or guarded by *standard railing*.

Walking / working surfaces shall be maintained so they are free from trip, slip, and other recognized hazards due to inadequate housekeeping, improper storage of materials or walking / working surface disrepair.

Employees are the first line of defense to assure the walking / working surfaces in their areas are free from recognized hazards. All employees are responsible to correct or report, to the department supervisor, recognized hazards identified in any area. A job shall not be considered completed until the work area has been cleaned up.

### **6.0 EXCEPTIONS**

Situations where persons are exposed to falls at any height into open chemical tanks, machinery, areas with protruding object hazards, or other areas presenting hazards in addition to falling, shall be addressed by eliminating, guarding with *standard railing* or use of fall protection.

### **7.0 NO CHAIN POLICY**

Chains are not allowed at the top of ladders and at the edge of work platforms or floor openings for fall prevention.

## 8.0 **FIXED LADDER POLICY**

Roof ladders that are out of compliance should be fixed or removed. Before a ladder is eliminated, a safety review should be held to take into account emergency access and escape issues.

Where roof ladder access areas are used to pull up tools from below, *standard railing* is required at the top of the ladder.

## 9.0 **SECURING SHUTDOWN / ABANDONED EQUIPMENT CONTAINING FALL HAZARDS**

All *floor holes* and *floor openings* located in shut down or abandoned equipment areas must be covered or guarded. Other fall hazards created by shutdown or abandoned equipment should be addressed using one or more of the following in this order of priority:

- Eliminate
- Guard all fall hazards within the area with *standard railing* or covers
- Restrict access to the area with *standard railing* and signs that depict restricted area, "authorized personnel only", describes the hazards and identify a person to contact.

## 10.0 **ROOF SAFETY RULES**

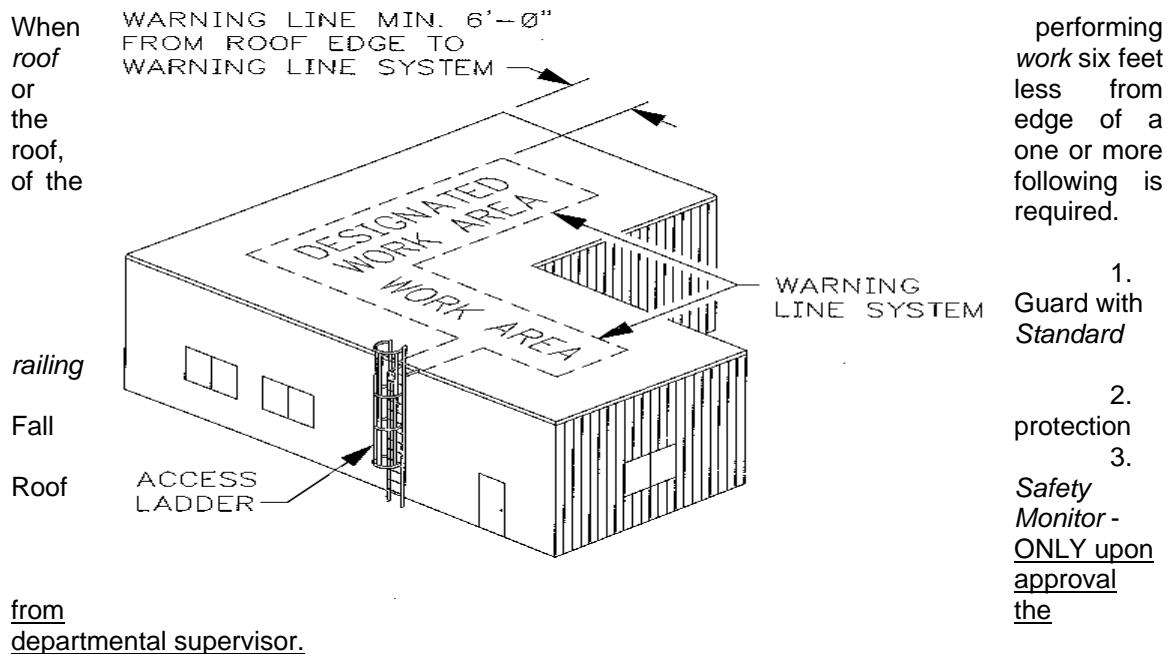
### **Roof Practices:**

- Minimum of two people are required on all roofs.
- No employee shall go on the roofs in the following conditions: lightning, heavy rain, high winds, icing conditions, hail, or in conditions of dense fog.
- No one shall be sent to any roofs after dark except for emergency repairs or planned work where all appropriate safety precautions have been taken in advance (i.e. portable lighting). Use of a personal flashlight is acceptable as a back-up only.
- Provisions need to be made in order to protect people below from falling object hazards.
- A Recommended Roof Work Safety Checklist is available on the CMCSS website and should be completed when roof work is necessary. (ref. [RSK-F007](#))
- Routine walkways should be identified on the roofs.

**Roof Loading-** Before beginning major roof work, an evaluation of the roof's design strength and structural integrity is to be performed by the department supervisor. The weight of equipment, material and personnel is calculated and reviewed as a part of the evaluation. If required, one or more layers of 3/4 inch plywood shall be used to provide additional roof support.

**Fall Prevention / Protection Requirements when Working on Flat or Low-Slope Roofs-** All roof work (excepting such activities as inspections, investigation, assessments, or those outlined in OSHA standard [1926.500](#) ) on flat or *low-slope roofs* is to be protected by one or more of the following:

- A designated work area (*warning line system*) around the work area and the area to and from the roof access, not less than six feet from the edge of the roof.
- Fall Protection



#### 11.0 **FALL PREVENTION / PROTECTION REQUIREMENTS WHEN ON STEEP-SLOPE ROOFS**

All roof activities on *steep-slope roofs* shall be protected by one or more of the following:

- *Standard railing with toe boards*
- Fall Protection

#### 12.0 **ROOF HOLES**

All *roof holes* (two inches or least dimension) shall be guarded or covered sufficiently to carry two times the maximum intended load. The cover shall be secured or installed in a manner so as to prevent accidental displacement by wind, equipment, or employees. The cover should be identified with large letters as "HOLE" or "COVER". When workers are exposed to the opening, the area shall be identified with a *warning line system* and workers inside the *warning line system* shall use fall protection if the least dimension is 12 inches or greater.

#### 13.0 **USE OF MECHANICAL EQUIPMENT OF ROOFS**

The *warning line system* must be as follows when mechanical equipment is used:

- No less than six (6) feet from the unprotected side or edge which is parallel to the equipment's direction of travel.
- No less than ten (10) feet from the unprotected side or edge which is perpendicular to the equipment's direction of travel.

#### 14.0 **SCAFFOLDS**

### Policy / Rules:

- Scaffolds are to be built and used in accordance with OSHA Standard [1926 Subpart L - Scaffolds](#) and CMCSS Fall Prevention / Protection Program.
- Designated *competent persons* shall have specific responsibilities pertaining to the construction, inspection and usage of scaffolds.
- Scaffolds shall be designed by *qualified* persons. The manufacturer is considered to be the qualified designer for purchased scaffolds.
- A method is to be used to identify scaffolding that is incomplete or unsafe and is not to be accessed by anyone other than the builders or dismantlers. (The Scaffoldtag® inspection system is an available method. (<http://www.scaffoldtag.com/index> )

### Competent person responsibilities

- Supervise and direct the erection, movement, alteration and dismantling of scaffolds.
- Evaluate direct connections to supporting structures for *suspended scaffolds*.
- Determine the method of access to *supported scaffolds* during erection and dismantling.
- Inspect scaffolds for visible defects prior to each work shift and after any occurrence which could affect a scaffold's structural integrity and document any deficiencies.
- Determine the feasibility and safety of providing fall protection for employees erecting or dismantling *supported scaffolds*.

OSHA Standard [1926.451](#) requires guardrails when the work level height is ten feet or higher.

### General rules

- No scaffold shall be erected, moved, dismantled, or altered except under the supervision of *competent persons*.
- A pre-use inspection must be performed by a competent person prior to each shift's use.
- Be sure the scaffold is made of stress-grade (scaffold) lumber or strong metal. Match the scaffold to the job.
- Scaffold planking shall be secured in place or overlapping a minimum of 12 inches and extend over the end supports a minimum of six inches and no more than twelve inches.
- Scaffolds shall be able to hold four times its maximum intended load.
- A climbing ladder, stairway, or equivalent safe means shall be provided for access and egress.
- Work level height shall not exceed four times the width of the smallest side, unless specified more strictly by the manufacturer, or properly secured under the direction of a *competent person*.
- Work level platform shall be full width of the scaffold (not less than 20 inches).

- Check that the footings are sound and rigid.
- Be sure the scaffold has guard rail systems when the work level height is four feet or higher.
- Keep scaffold loads to a minimum.
- Do not clutter scaffold with excess tools, materials, and debris.
- Keep the area around and under the scaffold clear.
- Limit outdoor use in bad weather.
- Avoid banging into scaffold
- Be sure workers on the ground are alerted to those on the scaffold.
- Toe boards are required when working ten feet or higher or where there are people below.
- Proper safeguards shall be in place to prevent the scaffolding from being struck by mobile equipment.

#### **15.0 PORTABLE LADDERS, MOBILE LADDER STANDS & MOBILE LADDER STAND PLATFORMS, AND WALKBOARDS**

- For any overhead work, always use the proper type of ladder. Never use makeshifts.
- Ladders, scaffolds, and walk boards shall be inspected by the person using the equipment for defects prior to each use. Missing safety feet or shoes, cracked rungs, damaged side rail, etc. or any equipment with structural defects shall be immediately identified with yellow equipment out of service tag and shall be withdrawn from service until repaired.
- Make sure hands and shoes are reasonably dry and free of oil and grease before using equipment.
- Always clean and return equipment to its proper storage after each use.
- Ladders being used in any location where they can be displaced by workplace activities, such as passageways, doorways, or driveways, shall be secured to prevent accidental displacement. Barriers are to be used or a person shall *attend* to keep the activities or traffic away from the area.

#### **16.0 STRAIGHT LADDERS**

- Select a ladder that is the right length for the job.
- Straight ladders must be equipped with safety feet.

##### **When securing ladder:**

- Ensure both side rails make contact with a fixed resting point, or use a device to prevent the ladder from twisting.
- The ladder is to be secured close to the top resting point.

- Rope shall be tied to both side rails directly below a rung.
- No slack in rope.
- Tie off point on the both side rails must be below the point to which ladder is resting.
- Rope shall be of substantial material such as 1/2" or greater, preferably nylon.
- If ladder is not secured as described above; it must be blocked or held against movement at the bottom.
- Slip resistant feet shall not be used as a substitute for care in placing, tying off, or holding a ladder that is on slippery surfaces.
- Extend the ladder at least three feet above the top support, if using the ladder as an access to a platform.
- Angle the ladder so the distance from the bottom to the wall equals one-fourth the ladder's working length.
- Do not leave ladders unattended unless they are securely anchored.
- Position an extension ladder before extending it.
- Do NOT stand on or above the third rung from the top of a straight or extension ladder.
- Ladders are not to be moved, shifted, or extended while occupied.
- Maintain three point contacts while climbing. Keep between side rails when working. Do not overreach. As a minimum, fall protection is required when use of both hands are required for a task and you are above 6 feet, or if the task requires working outside of the side rails.
- Always face the ladder when climbing up or down.
- Tools or other articles which are too large to be carried in pockets or belts are to be lifted and lowered by hand line.

*Note: Working outside of the side rails is defined as overreaching because the center of gravity is outside of the side rail.*

## **17.0 STEP LADDERS**

- Select a ladder that is the right length for the job.
- Ladder is to be used only on stable and level surfaces unless secured to prevent accidental displacement.
- Ladders are not to be moved or shifted while occupied.
- The top and the top step are not to be used as a step.



- Cross bracing on the rear section of step ladders is not to be used for climbing unless the ladders are designed and provided with steps for climbing on both the front and rear sections.
- Always face the ladder when climbing up or down. Maintain three point contacts when climbing on a ladder. Keep between the side rails. Do not overreach. Fall protection is not required if these provisions are met.
- Step ladders are not to be used as a straight ladder.

#### **18.0 MOBILE LADDER STANDS AND MOBILE LADDER STAND PLATFORMS (PORTABLE STAIRS)**

- All mobile ladder stands and platforms must be in compliance with ANSI A14.7-1991 and OSHA [1910.29](#).
- The maximum work level height is not to exceed four (4) times the minimum or least base dimension. Where the basic mobile unit does not meet this requirement, suitable outrigger frames are to be employed.
- The minimum step width is 16 inches.
- Mobile ladder stands and platforms shall be inspected prior to each use.
- Damaged or defective mobile ladder stands and platforms are not to be used and should be tagged out of service.
- Occupied mobile ladder stands and platforms should not be moved.
- Mobile ladder stands and platforms are not to be loaded beyond rated loads.
- Materials and equipment is not to be stored on the steps or platform.
- Additional height should not be gained by the addition of any type of extension or an object being placed on the unit.
- Foreign materials, such as mud or grease, should be removed from a person's shoes prior to ascending a unit.
- Handrails are to be used while ascending or descending the unit.
- The user is to face the ladders when ascending or descending a unit except when the slope of the ladder is 50 degrees or less above the horizontal.
- Users are cautioned to take proper safety measures when units are used in areas where electrical lines or sources exist.
- Occupied units should not be placed in front of a door unless the door is secured in an open position, locked, attended or barricaded.
- Overreaching, while on a unit, could cause instability and result in a fall. Always keep the unit in close proximity to the work. Descend and relocate the unit to prevent overreaching.
- Mobile ladder stands and platforms are to be used only on a level surface.

- Access or egress to or from any step or platform from any other elevated surface is prohibited unless the unit has been positively secured against movement.
- Fall protection is not required if these provisions are met.

## **19.0 WALK BOARDS**

- All footing or anchorage of walk boards are to be sound, rigid, and capable of carrying maximum intended load without settling or displacement.
- Walk board must be able to support four times the intended load.
- If wood is used, it must be stress-grade (scaffold) lumber.
- Inspect the walk board before use.
- Walk board must extend a minimum of six inches past support and no more than twelve inches. It must be anchored to prevent movement.
- Limit outdoor use in bad weather.
- Fall protection is required when exposed to six foot or greater falls or where persons are exposed to falls into open chemical tanks, machinery, areas with protruding object hazards, or other areas presenting hazards in addition to falling.

## **20.0 CAPACITY OF FALL PROTECTION EQUIPMENT**

The manufacturer standard certification capacity of Fall Protection equipment is 310 pounds, which includes a person's weight plus any tools or equipment being carried.

## **21.0 BODY HARNESS**

- When in use, all straps must be connected and loose ends tucked.
- Must have the pre-use inspection.
- A competent person, other than the user, must inspect body harness every 6 months.
- The back D-ring is the only ring on the harness to be used as fall protection.
- The frontal D-ring is to be used ONLY for ladder climbing devices, emergency descent devices and some work positioning. NEVER use the frontal D-ring for fall protection – should a fall occur, severe injury could result.

## **22.0 CONNECTORS**

- Lanyards must have pre-use inspection.
- A competent person, other than the user, must inspect lanyards every 6 months.
- Lanyards must always be connected to hardware – NEVER hook a lanyard back into its cable or webbing.

## **23.0 BODY HARNESS & CONNECTOR INSPECTION**

Lanyards and Harnesses must be inspected every six (6) months by a *competent person other than the user*. A qualified vendor or supervisor can be identified as the competent person for inspection, cleaning, and testing. Retractable lanyards, retractable lifelines, and tie-off adapters must be inspected annually by a competent person other than the user. All equipment must be visually examined by the user before each use.

#### **24.0 EQUIPMENT PRE-USE INSPECTION**

- Examine for cuts, cracks, tears, enlarged eye holes, and other signs of wear that might affect strength.
- Examine stitching for breaks, ragged strands, loose or rotted threads.
- Examine stitching and materials for degradation and evidence of corrosive attack due to contact with acids, caustics, welding holes, splatter, etc.
- Examine metal hardware for breaks, cracks, fractures, loose anchorage, and corrosion.

#### **25.0 INTERIM CLEANING OF HARNESSES AND LANYARDS**

Interim cleaning, between the six month cleaning and inspections, can be done by:

- wiping off the surface dirt with a sponge dampened in plain water,
- squeeze the sponge dry,
- dip the sponge in a mild solution of water and commercial soap or detergent,
- work up a thick lather with a vigorous back and forth motion,
- wipe dry with a clean cloth,
- hang freely to dry – away from excessive heat, steam, or long periods of sunlight.

**Do NOT put in a washing machine.**

#### **26.0 FREE FALL DISTANCE**

The fall arrest system lanyard should be connected in such a manner as to limit the potential for free fall to less than three feet where practical, and no more than six feet in any case. If using a *shock absorbing lanyard*, the maximum total fall distance allowed is 9.5 feet since the shock absorbing portion can expand to 3.5 feet. *Lanyard* length and positioning of lanyard tie off to an anchor point should be taken into account to limit the free fall distance to six feet.

Associated Documents: [RSK-F007](#) Recommended Roof Work Safety Checklist