MONTGOMERY COUNTY
TENNESSEE
RISK MANAGEMENT

Purpose

This establishes the Montgomery County Government's (known hereafter as "County") Fall Protection Policy intended to set procedures that will ensure workers safety when there are fall hazards present. Each year, the Bureau of Labor Statistics (BLS) reports that far too many workers die on the job, with many of those fatalities resulting from falls. Events surrounding these types of accidents often involve a number of factors, including unstable working surfaces, misuse of fall protection equipment, and human error. Studies have shown that the use of guardrails, fall arrest systems, covers, and proper training can prevent many deaths and injuries from falls.

In order to comply with the Occupational Safety and Health Administration Standards (OSHA), this written program has been established for The Montgomery County Government (hereafter referred to as "the County"). All county projects and facilities are included and comply with this program. Copies of this written program, including a copy of the OSHA Standard, are available for review by any employee.

Scope

Whenever performance of any task would allow a worker to fall a distance of four feet or more to a lower level, the project requires pre-planning in order that fall hazard are identified, evaluated, and controlled. The worker must receive adequate training and be protected from falling. The controlling regulations are 29 CFR 1910, Subpart D of the General Industry Standard (Walking Working Surfaces) hereinafter referred to as the Fall Protection Standard. State plan OSHA programs may have a different fall protection standard (state OSHA plans may differ). Fall protection requirements for construction jobsites are also likely more complex and a separate set of (jobsite-specific) fall protection requirements will be developed for construction sites.

Responsibilities

Safety Manager responsibilities include:

- providing oversight and technical support,
- securing the resources necessary to implement this program;
- ensuring that routine safety checks of work operations are performed;
- conducting an annual review of this program, including an inspection of systems
- updates (as needed) to ensure the effectiveness of the program; and,
- ensuring that proper reporting and record keeping is executed.

Supervisor\foremen are responsible for:

- compliance with this program at project sites under their supervision.
- performing routine safety checks of work operations;
- correcting any unsafe practices or conditions immediately;
- ensuring employees have the proper tools and personal protective equipment for working on elevated work surfaces;
- coordinating employee schedules for training;

- notifying the Safety Manager of potential hazards requiring assessments, or improvements to the program.

Employees are responsible for:

- complying with all aspects of this program;
- cooperating in all safety and health matters;
- reporting incidents related to fall protection to your supervisor/foreman immediately;
- wearing all required personal protective equipment – there are no exceptions;
- inspecting the equipment in accordance with manufacturer's guidelines and instructions; and,
- reporting hazardous conditions or other health and safety concerns immediately to your supervisor/foreman/project manager.

The program is reviewed at least annually to ensure both the safety of the county employees and compliance with the OSHA Fall Protection standards, as well as any state and local requirements.

Fall Protection Procedures

Basic Fall Protection

The floor of every workroom shall be maintained in a clean and dry condition, as possible.

Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practicable.

Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made.

Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard.

A standard railing constructed in accordance with applicable OSHA requirements shall guard every stairway floor opening. The railing shall be provided on all exposed sides (except at entrance to stairway).

Every ladderway floor opening or platform shall be guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

A standard skylight screen or a fixed standard railing on all exposed sides shall guard every skylight floor opening and hole.

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Tasks and Work Areas Requiring Fall Protection

Hoist Areas

Guardrail systems or personal fall arrest systems will be used in hoist areas when an employee may fall four (4) feet or more. If guardrail systems must be removed for hoisting, employees are required to use personal fall arrest systems.

Ladders

Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.

Ladders shall be inspected frequently and those that have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

Rungs should be kept free of grease and oil.

Portable ladders shall be so placed that the side rails have a secure footing.

Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked upon, locked, or guarded.

Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

Tops of the ordinary types of stepladders shall not be used as steps.

No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter, or roofline.

A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.

Portable ladders are designed as a one-man working ladder based on a 200-pound load.

The ladder base section must be placed with a secure footing.

When ascending or descending, the climber must face the ladder.

Employees should not lean too far over the side rails of a ladder such that is causes a fall hazard. A good "rule of thumb" is that employees keep their belt buckle within the side rails at all times.

Scaffolds

The following are basic procedures that apply to most scaffolds. There are many different types of scaffolds (see list below) and each type may have specific requirements. Only trained personnel will be permitted to assemble, disassemble, and work from any scaffold.

The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load without settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load.

Scaffolds and other devices mentioned or described in this section shall be maintained in safe condition. Scaffolds shall not be altered or moved horizontally while they are in use or occupied.

Any scaffold damaged or weakened from any cause shall be immediately repaired and shall not be used until repairs have been completed.

Scaffolds shall not be loaded in excess of the working load for which they are intended.

All planking or platforms shall be overlapped (minimum 12 inches) or secured from movement.

An access ladder or equivalent safe access shall be provided.

Scaffold planks shall extend over their end supports not less than 6 inches nor more than 18 inches.

The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

Materials being hoisted onto a scaffold shall have a tag line.

Overhead protection shall be provided for employees on a scaffold exposed to overhead hazards.

Scaffolds shall be provided with a screen between the toeboard and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard Wire one-half-inch mesh or the equivalent, where persons are required to work or pass under the scaffolds. Tools, materials, and debris shall not be allowed to accumulate in quantities to cause a hazard.

Scaffolds shall be secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means.

Specific training and procedures will be followed for the various types of scaffolding required for the project including, but not limited to, the following types of scaffolds:

- tube and coupler scaffolds,
- wood pole scaffolds,
- tubular welded frame scaffolds,
- outrigger scaffolds,
- masons' adjustable multiple-point suspension scaffolds,
- two-point suspension scaffolds (swinging scaffolds).
- single-point adjustable suspension scaffolds
- stone setters' adjustable multiple-point suspension scaffolds
- boatswain's chairs
- carpenters' bracket scaffolds
- bricklayers' square scaffolds
- horse scaffolds
- needle beam scaffold
- plasterers', decorators', and large area scaffolds Interior hung scaffolds
- ladder-jack scaffolds
- window-jack scaffolds
- roofing brackets
- crawling board or chicken ladders
- float or ship scaffolds, and
- manually propelled mobile ladder stands and scaffolds (towers).

Protection from Falling Objects

The fall protection regulation is not only designed to protect workers from falls, but also to protect workers from having objects fall on them. The use of toeboards is one method of complying with the requirements for overhead protection. The toeboard should be used as an element of the guardrail system. It is a rail placed at the walking/working surface level.

Toeboards are required to withstand a force of 50 pounds and are generally made of 2x4s. In areas where material is to be stored and the stack is higher than the toeboard, a screen or panel should be placed from the toeboard to either the midrail or top rail, whichever is higher than the stored material, to prevent materials from slipping through.

It is wise to store materials away from the edges of floors or roofs and away from any holes. Even small holes, such as those for heating or cooling ducts, should have covers placed on them and secured to prevent materials or tools from falling through and injuring someone on a lower level.

The key to providing a safer workplace for employees is ensuring that there is a good housekeeping program. If materials and debris are properly cleaned up and tools are put in proper storage areas, the hazard of falling objects can be greatly reduced.

Fall Protection Systems

Only the Safety Manager and the immediate supervisor can make decisions on the proper fall protection system to be used for any specific application. Fall protection systems will only be utilized after careful consideration and task / project review.

Covers

All hole and wall covers are secured to prevent accidental displacement.

- Covers are color-coded or bear the markings “HOLE” or “COVER”.
- Covers are able to support twice the weight of employees, equipment, and materials that might cross them.
- Covers located in roadways are able to support twice the axle load of the largest vehicle that might cross them.

Guardrail Systems

Guardrail systems are erected at unprotected edges, ramps, runways, or holes where it is determined by the supervisor\foremen that erecting such systems will not cause an increased hazard to employees. The following specifications are followed in the erection of guardrail systems.

Toprails are:

- at least ¼ inch in diameter (steel or plastic banding is unacceptable);
- flagged every six (6) feet or less with a high visibility material if wire rope is used;
- inspected by supervisor\foreman as frequently as necessary to ensure strength and stability;
- forty-two (42) inches (plus or minus three (3) inches) above the walking/working level; and
- adjusted to accommodate the height of stilts, if they are in use.

Midrails, screens, mesh, intermediate vertical members, and solid panels are erected in accordance with the OSHA Fall Protection Standard. Gates or removable guardrail sections are placed across openings of hoisting areas or holes when they are not in use to prevent access.

A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing.

The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.

A standard toeboard shall be 4 inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and with not more than 1/4-inch clearance above floor level. It may be made of any substantial material either solid or with openings not over 1 inch in greatest dimension.

Personal Fall Arrest Systems

Personal fall arrest systems are issued to and used by employees as determined by the Safety Manager and may consist of anchorage, connectors, body harness, deceleration device, lifeline, or suitable combinations.

Personal fall arrest systems:

- limit the maximum arresting force to 1800 pounds;
- are rigged so an employee cannot free fall more than six (6) feet or contact any lower level;
- bring an employee to a complete stop and limit the maximum deceleration distance traveled to three and a half (3 ½) feet;
- are strong enough to withstand twice the potential impact energy of an employee free falling six (6) feet (or the free fall distance permitted by the system, whichever is less);
- are inspected prior to each use for damage and deterioration; and
- are removed from service if any damaged components are detected.

All components of a fall arrest system meet the specifications of the OSHA Fall Protection Standard, and are used in accordance with the manufacturer's instructions.

The use of non-locking snaphooks is prohibited.

Dee-rings and locking snaphooks:

- have a minimum tensile strength of 5000 pounds; and
- are proof-tested to a minimum tensile load of 3600 pounds without cracking, breaking, or suffering permanent deformation.

Lifelines are:

- designed, installed, and used under the supervision of a 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 ability to solve or resolve problems relating to the subject matter, the work, or the project.
- protected against cuts and abrasions; and
- equipped with horizontal lifeline connection devices capable of locking in both directions on the lifeline when used on suspended scaffolds or similar work platforms that have horizontal lifelines that may become vertical lifelines.
- Self-retracting lifelines and lanyards have ropes and straps (webbing) made of synthetic fibers, and
- sustain a minimum tensile load of 3600 pounds if they automatically limit free fall distance to two (2) feet; or
- sustain a minimum tensile load of 5000 pounds (includes ripstitch, tearing, and deforming lanyards).

Anchorages support at least 5000 pounds per person attached and are:

- designed, installed, and used under the supervision of a qualified person
- capable of supporting twice the weight expected to be imposed on it; and
- independent of any anchorage used to support or suspend platforms.

Positioning Device Restraint Systems

Body belt or body harness systems are set up so that an employee can free fall no farther than two (2) feet, and are secured to an anchorage capable of supporting twice the potential impact load or 3000 pounds, whichever is greater. Requirements for snaphooks, d-rings, and other connectors are the same as detailed in this Program under *Personal Fall Arrest Systems.*

Safety Monitoring Systems

In situations when no other fall protection has been implemented, supervisor\foremen monitor the safety of employees in these work areas.

The supervisor\ foreman is:

- competent in the recognition of fall hazards;
- capable of warning workers of fall hazard dangers;
- operating on the same walking/working surfaces as the employees and able to see them;
- close enough to work operations to communicate orally with employees; and
- free of other job duties that might distract them from the monitoring function.

No employees other than those engaged in the work being performed under the Safety Monitoring System are allowed in the area. All employees under a Safety Monitoring System are required to promptly comply with the fall hazard warnings of the supervisor\foremen.

Warning Line Systems

Warning line systems consisting of supporting stanchions and ropes, wires, or chains are erected around all sides of open edged work areas.

- Lines are flagged at no more than six (6) foot intervals with high-visibility materials.
- The lowest point of the line (including sag) is between 34 and 39 inches from the walking/working surface.
- Stanchions of warning line systems are capable of resisting at least 16 pounds of force.
- Ropes, wires, or chains have a minimum tensile strength of 500 pounds.
- Warning line systems are erected at least six (6) feet from the edge, except in areas where mechanical equipment is in use. When mechanical equipment is in use, warning line systems are erected at least six (6) feet from the parallel edge, and at least ten (10) feet from the perpendicular edge.

Training

All employees will be trained and familiar with hazards related to falls, and how to use proper procedures to minimize these hazards. Specifically, training must include, at a minimum:

- nature of the fall hazards employees may be exposed to;

- correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems;
- use and operation of controlled access zones, guardrails, personal fall arrest systems, warning lines, and safety monitoring systems;
- role of each employee in the safety monitoring system (if one is used);
- correct procedures for equipment and materials handling, and storage and erection of overhead protection;.
- role of each employee in alternative fall protection plans (if used); and,
- requirements of the OSHA Fall Protection Standard.

In addition, retraining must be provided for each employee, as necessary, so that the employee maintains the understanding and knowledge necessary for the safe performance of specific tasks needing to be conducted by that individual.

Additional training is provided:

- when there is a change in job responsibilities;
- a change in equipment that present a new hazard; or,
- when their work takes them into hazardous areas.

Additional retraining is also provided whenever a periodic inspection reveals, or whenever there is reason to believe there are deviations from or inadequacies in an employee's knowledge of known hazards.

Following each training session, the employee is required to sign and date the training record verifying attendance.

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APPENDIX A

TERMS AND DEFINITIONS

Anchorage: a secure point of attachment for lifelines, lanyards, or deceleration devices.

Body belt: a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.

Body harness: straps that may be secured about the person in a manner that distributes the fall-arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means for attaching the harness to other components of a personal fall arrest system.

Connector: A device that is used to couple (connect) parts of a personal fall arrest system or positioning device system together.

Deceleration device: any mechanism, such as a rope, grab, ripstitch lanyard, specially-woven lanyard, tearing lanyard, deforming lanyard, or automatic self-retracting lifeline/lanyard, which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an employee during fall arrest.

Deceleration distance: the additional vertical distance a falling person travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which a deceleration device begins to operate.

Guardrail system: a barrier erected to prevent employees from falling to lower levels.

Hole: a void or gap two (2) inches (5.1 centimeters) or more in the least dimension in a floor, roof, or other walking/working surface.

Lanyard: a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage**.**

Leading edge: the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as a deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed.

Lifeline: 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), that serves as a means for connecting other components of a personal fall arrest system to an anchorage.

Opening: a gap or void 30 inches (76 centimeters) or more high and 18 inches (46 centimeters) or more wide, in a wall or partition through which employees can fall to a lower level.

Personal fall arrest system: a system including but not limited to an anchorage, connectors, and a body harness used to arrest an employee in a fall from a working level.

Positioning device system: 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 backwards.

Rope grab: a deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest a fall.

Safety monitoring system: a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

Self-retracting lifeline/lanyard: a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under minimal tension during normal employee movement and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snaphook: a connector consisting of a hook-shaped member with a normally closed keeper, or a similar arrangement, which may be opened to permit the hook to receive an object and, when released automatically, closes to retain the object.

Steep roof: a roof having a slope greater than 4 in 12 (vertical to horizontal).

Toeboard: a low protective barrier that prevents material and equipment from falling to lower levels and which protects personnel from falling.

Unprotected sides and edges: 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 39 inches (1 meter) high.

Walking/working surface: any surface, whether horizontal or vertical, on which an employee walks or works, including but not limited to floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel. Does not include ladders, vehicles, or trailers on which employees must be located to perform their work duties.

Warning line system: 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 guardrail, body belt, or safety net systems to protect employees in the area.

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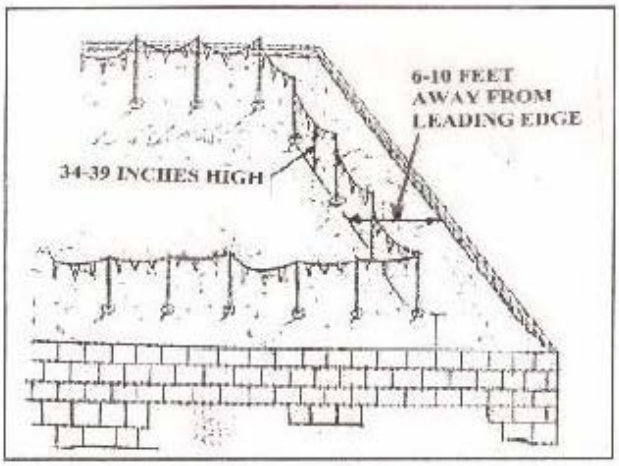
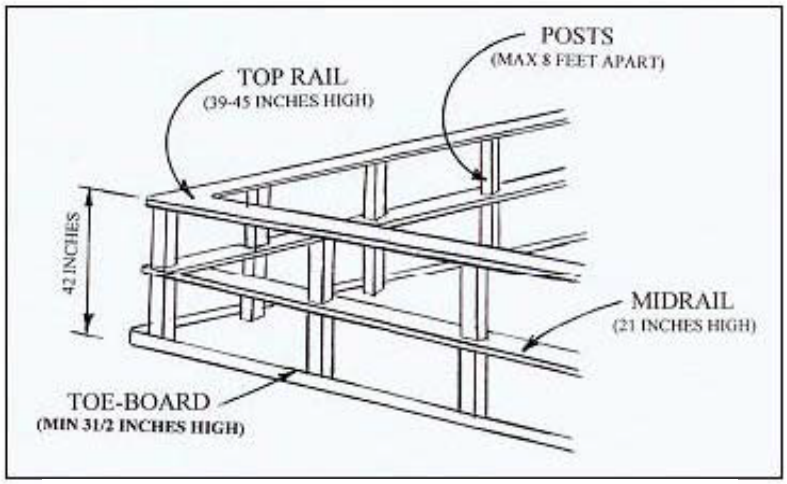
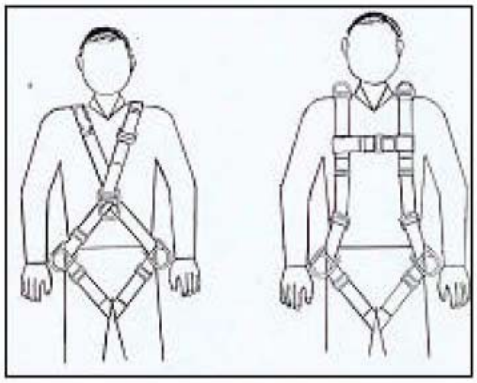
APPENDIX B



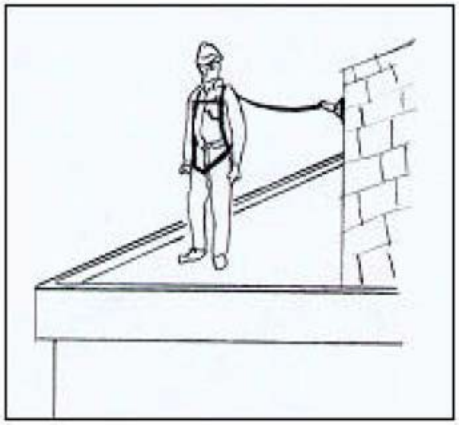
Warning Line System



Specifications for Standard Railings



Full Body Harness



Body Restraint System