

## FALL PROTECTION PROGRAM

### OVERVIEW

The Fall Protection Program serves to provide guidance to management and employees working for the City of Mebane. It is the intent of this document to meet any local, state or federal mandates including those required pursuant to the regulations outlined under Occupational Health and Safety Administration's (OSHA) 29 Code of Federal Regulation 1910 and 1926. 29 CFR 1926.500-503 describe the duty to provide fall protection, sets the criteria and practices for all fall protection systems and the required training. It covers hazard assessment, fall protection and safety monitoring systems. Also addressed, are controlled access zones and guardrails, personal fall arrest, warning line system and positioning device systems. The City of Mebane Safety Committee Chair, or their designee, shall investigate any accident that occurs within the jurisdictional limits for city.

### PURPOSE

The fall protection program is created to provide guidance and expectation for employees and visitors of the City of Mebane. The programs shall be reviewed at least annually, and, based on the ever changing work and natural growth of the City of Mebane so shall these documents be modified to reflect such growth and change. The city manager or their designee shall have responsibility for managing changes to the safety program.

### RESPONSIBILITY

It is the responsibility of every employee to not only read, but also *understand* the information on these pages. Each employee of the City of Mebane should consider it a personal responsibility to engage in daily activity that is safe and consistent with these programs.

City of Mebane management has the expectation of each employee to understand their right to ask questions and seek more information if a program or task is not clear or well understood. If an employee has questions regarding the safety and health programs they should contact their supervisor for clarification.

The programs contained herein shall serve as a minimum guideline for entities coming on to City of Mebane property for the purposes of conducting business. Prior to conducting any project the entity shall establish compliance with the guidance set forth in this document.

Safety of employees, vendors, contractors and the public, city equipment and property will be considered the priority on any task and in no case shall it be compromised.

### CONTROLLED ACCESS ZONES

Controlled access zones, when created to limit entrance to areas where leading edge work and other operations are taking place, shall be defined by a controlling line or other means that restricts access. Control lines shall consist of ropes, wires, tapes or equivalent material, supporting stanchions and each shall:

- Be flagged or otherwise clearly marked at not more than six foot intervals with high visibility material;
- Be rigged and supported in such a way that the lowest point (including sag) is not less than 39 inches from the walking/working surface and the highest point is not more than 50 inches;
- Be strong enough to sustain stress of not less than 200 pounds;
- Extend along the entire length of the unprotected leading edge and shall be parallel to the unprotected or leading edge; and
- Be connected on each side to a guardrail system or wall.

When control lines are used they shall be erected not less than six feet and no more than 25 feet from the unprotected or leading edge, except when pre-cast concrete members are being erected. In the latter case, the control line shall be erected not less than six feet and no more than 60 feet or half the length of the member being erected, whichever is less, from the leading edge.

On floors and roofs where guardrail systems are in place, but need to be removed to allow leading edge work to take place, only the portion of the guardrail necessary to accomplish that day's work shall be removed.

#### **GUARDRAIL SYSTEMS**

If a guardrail system is used to protect employees from falls, the system shall meet the following criteria:

- Top rails and mid rails of guardrail systems shall be at least one quarter inch in diameter;
- If wire rope is used for top rails, it shall be marked every six feet with highly visible material;
- Steel or plastic banding material shall not be used as top rails or mid rails;
- Manila, plastic or synthetic rope used for top rails or mid rails shall be inspected frequently to ensure strength and stability;
- The top edge height of top rails or guardrails shall be 42 inches plus or minus three inches above the walking level;
- When workers are using stilts, the top edge height of the top rail or equivalent shall be increased equal to the height of the stilts;
- Screens, mid rails, mesh, intermediate vertical members or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there are no walls or parapet walls at least 21 inches high;
- When mid rails are used, they shall be installed at a height midway between the top edge of the guardrail system and the walking/working level;
- When screens and mesh are used they shall extend from the top rail to the walking/working level and along the entire opening between top rail supports;
- Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches apart;
- Other structural members, such as additional mid rails and panels, shall be installed so that there are no openings larger than 19 inches;
- The guardrail system shall be capable of withstanding a force of at least 200 pounds;
- Mid rails, screens, mesh, intermediate vertical members, solid panels and equivalent structural members shall be capable of withstanding a force of at least 150 pounds;

- Guardrail systems shall have smooth surfaces to protect employees from punctures or lacerations and prevent clothing from snagging;
- The ends of top rails and mid rails shall not overhang terminal posts, except where such overhang does not constitute a projection hazard;
- A chain gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place;
- At holes, six feet or more in depth, guardrail systems shall be set up on all unprotected sides or edges and all holes shall be covered when not in use;
- Guardrail systems with a gate shall be used around holes that are access points to prevent employees from falling into these holes; and
- If guardrail systems are used at the sides or edges of ramps and runways, they shall be erected on each side or edge.

### PERSONAL FALL ARREST SYSTEMS

*The use of a body belt for fall protection is prohibited.*

All personal fall arrest systems shall be inspected by the user prior to each use. The inspection shall include examination for wear, damage and other deterioration. If during the inspection the user discovers defects or damage, the user shall immediately remove the component from service.

Dee-rings and snap-hooks shall have a minimum tensile strength of 5,000 pounds without cracking, breaking or suffering permanent deformation. Snap hooks shall be sized to be compatible with the member that they will be connected to, or shall be of a locking configuration.

Snap hooks that are not of the locking type and designed for the following connections shall not be engaged directly to:

- Webbing, rope or wire rope;
- To each other;
- To a d-ring to which another snap hook or other connector is attached;
- To a horizontal lifeline; or
- To any object incompatible in shape or dimension relative to the snap hook, thereby causing the connected object to depress the snap hook keeper and release unintentionally.

A hook is considered to be compatible when the diameter of the d-ring to which the snap hook is greater than the inside length of the snap hook when measured from the bottom (hinged-end) of the snap hook keeper to the inside curve of the top of the snap hook. Thus, no matter how the d-ring is positioned or moved with the snap hook attached, the d-ring cannot touch the outside of the keeper, thus depressing it open. The use of non-locking d-rings is prohibited.

On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

Horizontal lifelines shall be designed, installed and used under the supervision of a qualified person, as part of a complete fall arrest system that maintains a safety factor of at least two. Lifelines shall be protected against being cut or abraded.

Self-retracting lifelines and lanyards that automatically limit free fall distance to two feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Self-retracting lifelines and lanyards that do not limit free fall distance to two feet or less, rip stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.

Ropes and straps used in lanyards, lifelines and strength components of body belts and body harnesses shall be made of synthetic fibers.

Anchorage shall be designed, installed and used under the supervision of a qualified person. Anchorage used to attach personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms and shall be capable of supporting at least 5,000 pounds per person attached.

Lanyard and vertical lifelines shall have a minimum breaking strength of 5,000 pounds.

#### **PERSONAL POSITIONING DEVICE**

Body harness systems shall be set up so that a worker can free fall no more than two feet. All belts or harnesses shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds, whichever is greater.

#### **WARNING LINE SYSTEMS**

Warning line systems used on roofs shall consist of ropes, wires or chains, and supporting stanchions. The warning lines shall be constructed as follows:

- Flagged at not more than six foot intervals with high visibility material;
- Rigged and supported so that the lowest point including sag is no less than 34 inches from the walking/working surface and its highest point is no more than 39 inches from the walking/working surface;
- Stanchions, after being rigged with warning lines, shall be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof or platform edge;
- The rope, wire or chain shall have a minimum tensile strength of 500 pounds and after being attached to the stanchions, shall support without breaking the load applied to the stanchions as prescribed above; and
- Shall be attached to 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 the adjacent section before the stanchion tips over.

When mechanical equipment is being used, the warning line shall be erected not less than six feet from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet from the roof edge perpendicular to the direction of mechanical equipment operation.

When mechanical equipment is not being used, the warning line shall be erected not less than six feet from the roof edge.

### **HOIST AREAS**

All employees in a hoist area shall be protected from falling six feet or more by guardrail systems or personal fall arrest systems. If guardrail systems or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening to receive or guide equipment and materials, that employee shall be protected by a personal fall arrest system.

### **HOLES, RAMPS AND OTHER WALKWAYS**

All holes, openings, ramps, runways, and other walkways crossing or covering openings six feet or more, shall be protected with a guardrail system.

### **WALL OPENINGS**

All employees working on, at or near wall openings where the bottom edge of the wall opening is six feet or more and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, shall be protected by use of either a guardrail system or a personal fall arrest system.

### **COVERS**

Covers used over openings in the roadways and vehicular aisles shall meet the following criteria:

- Support twice the maximum axle weight of the largest vehicle the cover might be subjected;
- Support twice the weight of employees, equipment and materials that may be imposed on the cover at anytime;
- Be secured at all times; and
- Be identified with markings indicating "HOLE" or "COVER".

### **ROOFS**

#### ***Low-Sloped Roofs***

All employees working on low-sloped roofs with unprotected sides and edges six feet or more above the lower levels shall be protected from falling by guardrail systems or a combination warning line system and personal fall arrest system, or a combination warning line system and a safety monitoring system.

Roofs that are 50 feet or less in width can use a safety monitoring system without a warning line system.

#### ***Steep Roofs***

All employees on a steep roof with unprotected sides and edges six feet or more above the lower levels shall be protected by either guardrail systems with toe boards or a personal fall arrest system.

### **PROTECTION FROM FALLING OBJECTS**

When guardrail systems are used to prevent materials from falling from one level to another, any opening shall be small enough to prevent passage of potential falling objects. No materials or equipment, except masonry or mortar shall be stored within four feet of working edges. Excess mortar, broken or scattered masonry, and all other materials and debris shall be kept clear of the working area by removal at regular intervals.

During roofing work, materials and equipment shall not be stored within six feet of a roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge shall be stable and self-supporting.

### **CANOPIES**

When canopies are used as protection from falling objects they shall be constructed strong enough to prevent collapse and to prevent penetration by any objects that fall onto them.

### **TOE BOARDS**

When toe boards are used as protection from falling objects, they shall be erected along the edges of the overhead walking or working surface for a distance sufficient to protect persons working below. Toe boards shall be capable of withstanding a force of at least 50 pounds applied in any downward or outward direction at any point along the toe board. Toe boards shall be a minimum of three and one half inches tall from their top edge to the level of the walking/working surface, have no more than 0.25 inches clearance above the walking/working surface, and be solid or have openings no larger than one inch in size.

Where tools, equipment, or materials are piled higher than the top edge of a toe board, paneling or screening shall be erected from the walking/working surface or toe board to the top of a guardrail system's top rail or mid rail, for a distance sufficient to protect persons below.

### **SAFE MONITORING SYSTEM**

If no fall protection, including personal fall arrest systems, warning line systems, controlled access zones or guardrail system can be implemented, then a safety monitoring system shall be established. The responsible department shall designate a safety monitor to monitor the safety of the workers. The safety monitor shall:

- Be competent in the recognition of fall hazards;
- Be capable of warning workers of fall hazard dangers;
- Detect unsafe work practices as in accordance with this policy;
- Work on the same surface as the workers and maintain visual contact of all employees;
- Be close enough to the work operations to communicate orally with the workers; and
- Have no other duties that will interfere or distract from the monitoring function.

Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

No worker, other than one engaged in work on low-sloped roofs, or covered by a personal fall arrest system, shall be allowed in an area where the employee is being protected by a safety monitoring system.

All workers in a controlled access zone shall be instructed to promptly comply with all fall warnings issued by the safety monitors.

### **TRAINING**

All employees that are exposed to fall hazards shall be trained in the recognition and minimization of such hazards. Training shall be arranged through the City of Mebane Safety Committee. The employee shall be trained in the following areas:

- Nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, disassembling and inspecting fall protection systems;
- The use and operation of controlled access zones and guardrail, personal fall arrest and warning lines;
- The limitations on the use of mechanical equipment during the performance of roofing work on low-slope roofs;
- The correct procedures for equipment and materials handling and storage and the erection of overhead protection; and
- The employee's role in fall protection plans.

**Policy Review and Critique Form**

**Review by:**

Danny C. Lineberry Jr.  
EnviroSafe Consulting and Investigation  
2012 Anthony Road  
Burlington, N.C. 27215

**Date:**

1 / 28 / 2015

**Type of review:**

Annual:  X                       Post-Emergency:      

**Problems leading to review:**

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**Problems noted during review:**

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**Action to be taken:**

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