FALL PROTECTION PROGRAM

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APPROVAL:

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1 POLICY AND SCOPE

All MBL employees working four feet (six feet construction) or more above a lower level shall be protected from fall hazards and falling objects in accordance with this policy.

The following systems and procedures have been designed to prevent employees from falling off, onto, or through working levels. Areas covered by this policy include, but are not limited to:

- Unprotected sides and edges;
- Leading edge work;
- Roofing work;
- Ramps;
- Holes;
- Wall openings; and
- Other walking/working surfaces.

2 AUTHORITY AND RESPONSIBILITY

2.1 Environmental Health and Safety Manager is responsible for:

- Developing, implementing, and updating the MBL’s Fall Protection program;
- Reporting all questionable conditions discovered to the responsible department;
- Inspecting all building specific equipment annually; and
- Providing general fall protection training.

2.2 Plant Operations and Maintenance (POM) Manager is responsible for:

- Ensuring all affected employees are trained in fall protection;
- Ensuring all affected employees follow the described practices within this policy;
- Purchasing all appropriate fall protection equipment and related safety devices; and
- Ensuring all inspection and maintenance practices for fall protection equipment are followed in accordance with this policy.

2.3 Employees are responsible for:

- Complying with the practices within the Fall Protection program.
3 FALL PROTECTION SYSTEMS

OSHA standard, 29 CFR 1926.500-503, describes the duty to provide fall protection, sets the criteria and practices for all fall protection systems and the required training. MBL employees will use the following systems: guardrails, personal fall arrest, warning line system, positioning device systems, and/or safety monitoring systems. These systems are defined below.

3.1 Guardrail Systems

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

- Toprails and midrails of guardrail systems shall be at least one quarter inch in diameter;
- If wire rope is used for toprails, it shall be marked every six feet with highly visible material;
- Steel or plastic banding material shall not be used as toprails or midrails;
- Manila, plastic or synthetic rope used for toprails or midrails shall be inspected frequently to ensure strength and stability;
- The top edge height of toprails 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, midrails, 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 midrails 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 toprail to the walking/working level and along the entire opening between toprail supports;
- Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches apart;
- Other structural members, such as additional midrails 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;
• Midrails, 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 toprails and midrails 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.

3.2 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. Snaphooks shall be sized to be compatible with the member to which they will be connected, or shall be of a locking configuration.

Snaphooks 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 dee-ring to which another snaphook or other connector is attached;
• To a horizontal lifeline; or
• To any object incompatible in shape or dimension relative to the snaphook, thereby causing the connected object to depress the snaphook keeper and release unintentionally.
A hook is considered to be compatible when the diameter of the dee-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 dee-ring is positioned or moved with the snap hook attached, the dee-ring cannot touch the outside of the keeper, thus depressing it open. The use of non-locking dee-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, ripstitch 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.

### 3.3 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.

3.4 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.

3.5 Safety Monitoring Systems

If no fall protection, including personal fall arrest systems, warning line systems, 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.

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.

4 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.

4.1 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.

4.2 Toeboards

When toeboards 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. Toeboards shall be capable of withstanding a force of at least 50 pounds applied in any downward or outward direction at any point along the toeboard. Toeboards 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 toeboard, paneling or screening shall be erected from the walking/working surface or toeboard to the top of a guardrail system’s top rail or midrail, for a distance sufficient to protect persons below.

5 MBL SPECIFIC ROOFS

The following buildings use specific fall protection systems and requirements:

- Lillie
  - Guardrail System – only at chock point sections
  - Personal Fall Arrest System – used when work 6 feet or less to edge
  - Safety Monitoring Systems – used when work further than 6 feet from edge

- Loeb
  - Guardrail System – surrounds enter room

- Rowe
  - Guardrail System – only at chock point sections
  - Personal Fall Arrest System – used when work 6 feet or less to edge
  - Safety Monitoring Systems – used when work further than 6 feet from edge

- Swope
  - Personal Fall Arrest System – used when work 6 feet or less to edge
  - Safety Monitoring Systems – used when work further than 6 feet from edge

- ESL
  - Personal Fall Arrest System – used when work 6 feet or less to edge
  - Safety Monitoring Systems – used when work further than 6 feet from edge
6 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 Environmental Health and Safety. 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 guardrails, personal fall arrest systems, 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.