LADDER SAFETY

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APPROVAL:

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DATE
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1 POLICY
All ladders used in construction, renovation, repair (including painting and decorating) and demolition shall be constructed, erected and used in accordance with this policy based on established requirements by the Occupational Safety and Health Administration (OSHA) as cited in 29 CFR 1926.1053.

2 AUTHORITY AND RESPONSIBILITY

2.1 Environmental Health and Safety Manager is responsible for:
   - Reviewing this policy to ensure compliance with current regulations;
   - Reporting any questionable conditions that are discovered to the responsible department; and
   - Ensuring all affected employees are trained in accordance with this policy.

2.2 Departments are responsible for:
   - Ensuring all affected employees follow the prescribed practices within this policy;
   - Ensuring all inspection and maintenance practices for ladders are followed in accordance with this policy.

2.3 Employees are responsible for:
   - Responsible for complying with the practices within this Safety Ladder policy.

3 LADDERS
All ladders constructed on site, including job-made ladders, shall meet the following requirements:
   - A double-cleated ladder or two or more ladders shall be provided when ladders are the only way to enter or exit a work area having 25 or more employees, or when a ladder serves simultaneous two-way traffic;
   - Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced when the ladder is in position for use;
• Rungs, cleats and steps of portable and fixed ladders shall not be spaced less than ten inches apart, nor more than 14 inches apart, along the ladder’s side rails;
• Rungs, cleats and steps of step stools shall not be less than eight inches apart, nor more than 12 inches apart, between center lines of the rungs, cleats and steps;
• Ladders shall not be tied or fastened together to create longer sections unless they are specifically designed for such use;
• A metal spreader or locking device shall be provided on each step ladder to hold the front and back sections in an open position when the ladder is being used;
• When splicing side rails, the resulting side rail shall be equivalent in strength to a one-piece side rail made of the same material;
• Two or more separate ladders used to reach an elevated work area shall be offset with a platform or landing between the ladders, except when portable ladders are used to gain access to fixed ladders;
• Ladder components shall be smooth surfaced to prevent injury from punctures or lacerations and prevent snagging of clothing; and
• Wood ladders shall not be coated with any opaque covering, except for identification or warning labels, which may be placed only on one face of a side rail.

3.1 Portable Ladders

Portable ladders shall meet the following requirements:

• Non-self supporting and self-supporting portable ladders shall support at least four times the maximum intended load;
• Extra heavy duty type 1A metal or plastic ladders shall sustain 3.3 times the maximum intended load;
• The minimum clear distance between side rails for all portable ladders shall be 11.5 inches; and
• The rungs of portable metal ladders shall be corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize slipping.

3.2 Fixed Ladders

Fixed ladders shall meet the following requirements:

• A fixed ladder shall be able to support at least two loads of 250 pounds each, concentrated between any two consecutive attachments;
• Individual rung/step ladders shall extend at least 42 inches above an access level or landing platform either by the continuation of the rung spacing as horizontal grab
bars or by providing vertical grab bars that shall have the same lateral spacing as the vertical legs of the ladder rails;

- Each step or rung of a fixed ladder shall be able to support a load of at least 250 pounds applied in the middle of the step or rung;
- The minimum clear distance between the sides of an individual rung or step ladders and between the side rails of other fixed ladders shall be 16 inches;
- The rungs and steps of fixed metal ladders shall be corrugated, knurled, dimpled, coated with skid-resistant material or treated to minimize slipping;
- The minimum perpendicular clearance between fixed ladder rungs, cleats and any obstruction behind the ladders shall be seven inches, except that the clearance for an elevator pit ladder shall be four and one-half inches;
- The minimum perpendicular clearance between the centerline of fixed ladder rungs, cleats and steps and any obstruction on the climbing side of the ladder shall be 30 inches. If obstructions are unavoidable, clearance may be reduced to 24 inches, provided a deflection device is installed to guide workers around the obstruction;
- The step-across distance between the center of the steps and rungs of fixed ladders and the nearest edge of a landing area shall be no less than seven inches and no more than 12 inches. A landing platform shall be provided if the step-across distance exceeds 12 inches;
- Fixed ladders without cages or wells shall have at least a 15 inch clearance width to the nearest permanent object on each side of the centerline of the ladder;
- Steps or rungs for through-fixed ladder extensions shall be omitted from the extension and the extension of side rails shall be flared to provide between 24 and 30 inches clearance between side rails; and
- When safety devices are provided, the maximum clearance distance between side rail extensions shall not exceed 36 inches.

4 SAFETY PRACTICES WITH USING LADDERS

When using ladders, whether they are fixed or portable, there are several safety practices that shall be followed before and during use.

- When portable ladders are used for access to an upper landing surface, the side rails shall extend at least three feet above the upper landing surface. When such an extension is not possible, the ladder shall be secured and a grasping device such as a grab rail shall be provided to assist workers in mounting and dismounting the ladder;
• Ladders shall be maintained free of oil, grease and other slipping hazards;
• Ladders shall not be loaded beyond the maximum intended load as identified on the specification label found on the side rail of the ladder;
• Ladders shall only be used for the purpose for which they were designed;
• Non-self supporting ladders shall be used at an angle where the horizontal distance from the top support to the foot of the ladders is approximately one quarter of the working length of the ladder. Wood job-made ladders with spliced side rails shall be used at an angle where the horizontal distance is one-eighth the working length of the ladder;
• Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal measured from the backside of the ladder;
• Ladders shall be used only on stable and level surfaces unless secured to prevent accidental movement;
• Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental movement. Slip-resistant feet shall not be used as a substitute for the care in placing, lashing or holding a ladder upon slippery surfaces;
• Ladders placed in areas such as passageways, doorways, driveways, or where they can be displaced by workplace activities or traffic shall be secured to prevent accidental movement or a barricade shall be used to keep traffic or activities away from the ladder;
• The area around the top and bottom of the ladders shall be kept clear;
• The top of a non-self supporting ladders shall be placed with two rails supported equally unless it is equipped with a single support attachment;
• Ladders shall not be moved, shifted or extended while in use;
• Ladders shall have nonconductive side rails if they are used where the worker or the ladder could contact exposed energized electrical equipment;
• The top or top step of a stepladders shall not be used as a step;
• Cross bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections;
• Single-rail ladders shall not be used;
• When ascending or descending a ladder, the workers shall face the ladder; and
• A worker on a ladder shall not carry any object or load that could cause him/her to lose balance and fall.

5  Safety Devices for Fixed Ladders

Fixed ladders shall be provided with cages, wells, ladder safety devices or self-retracting lifelines where the length of climb is less than 24 feet but the top of the ladder is at a distance greater than 24 feet above lower levels.

5.1  Cages for Fixed Ladder

Cages for fixed ladders shall meet the following requirements:

• Horizontal bands shall be fastened to the side of rail ladders or directly to the structure, building or equipment for individual rung ladders;
• Vertical bars shall be on the inside of the horizontal bands and be fastened to them;
• Cages shall not extend less than 27 inches or more than 30 inches from the centerline of the step or rung and shall not be less than 27 inches wide;
• The inside of the cage shall be clear of projections;
• Horizontal bands shall be spaced at intervals not more than four feet apart measured from centerline to centerline;
• Vertical bars shall be spaced at intervals not more than 9.5 inches measured centerline to centerline;
• The bottom of the cage shall be between seven and eight feet above the point of access to the bottom of the ladder. The bottom of the cage shall be flared not less than four inches between the bottom horizontal band and the next higher band; and
• The top of the cage shall be a minimum of 42 inches above the top of the platform or the point of access at the top of the ladder. Provisions shall be made for access to the platform or other point of access.

5.2  Wells for Fixed Ladders

Wells for fixed ladders shall meet the following requirements:

• Wells shall completely encircle the ladder;
• Wells shall be free of projections;
• The inside face of the well on the climbing side of the ladder shall extend between 27 and 30 inches from the centerline of the step or rung;
• The inside width of the well shall be at least 30 inches; and
• The bottom of the well above the point of access to the bottom of the ladders shall be between seven and eight feet.

6 Ladder Support Systems

Ladder safety devices and related support systems for fixed ladders shall meet the following requirements:

• All safety devices shall be able to withstand, without failure, a drop test consisting of a 500 pound weight dropping 18 inches;
• All safety devices shall permit the worker to ascend or descend without continually having got hold, push or pull any part of the device leaving both hands free for climbing;
• All safety devices shall be activated within two feet after a fall occurs and limit the descending velocity of an employee to seven feet per second or less; and
• The connection between the carrier or lifeline and the point of attachment to the body belt or harness shall not exceed nine inches in length.
• Mounting for rigid carriers shall be attached at each end of the carrier, with intermediate mounting, spaced along the entire length of the carrier, to provide the necessary strength to stop worker falls;
• Mountings for flexible carriers shall be attached at each end of the carrier. Cable guides for flexible carriers shall be installed with a spacing between 25 and 40 feet along the entire length of the carrier to prevent wind damage to the system;
• The design and installation of mounting and cable guides shall not reduce the strength of the ladder; and
• Side rails and steps or rungs for side-step fixed ladders shall be continuous in extension.

7 INSPECTION

Ladders shall be inspected by a department manager or designee for visible defects on a semi-annual basis and after any incident that could affect their safe use.
Portable ladders with structural defects such as broken or missing rungs, cleats, or steps, broken or split rails, corroded components, or other faulty or defective components shall immediately be marked defective or tagged with “Do Not Use” and withdrawn from service until repaired. Fixed ladders with structural defects such as broken or missing rungs, cleats or steps, broken or split rails, or corroded components shall be withdrawn from service until repaired.

Defective fixed ladders are considered withdrawn from use immediately when they are:

- Tagged with “Do Not Use” or similar language;
- Marked in a manner that identifies them as defective;
- Blocked such as with a plywood attachment that spans several rungs.
- A contractor or company who will certify that the portable or fixed ladder meets original specifications shall complete all repairs of the ladder before the ladder is returned to use.

8 TRAINING

All employees using or constructing ladders shall be trained every three years to recognize hazards related to ladders and to use proper procedures to minimize these hazards. Employees shall be trained to demonstrate competency in the following areas:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining and disassembling the fall protection systems to be used;
- The proper construction, use, placement and care in handling of all ladders; and
- The maximum intended load-carrying capacities of ladders used.

Environmental Health and Safety shall be responsible for providing training on ladder safety. Employees shall be retrained as necessary to maintain their understanding and knowledge on the safe use and construction of ladders.