FALL PROTECTION (PERSONAL FALL ARREST SYSTEMS)

15.0

The purpose of this policy is to specify procedures and training for the safety of the employees in the Facilities Management Group while working on elevated surfaces and ladders. Employees are required to be familiar with this fall protection policy. Additionally, those employees working on aerial platforms, powered lifts or other elevated platform equipment must receive training on the use of such equipment prior to use. Other possible hazards include, but are not limited to:

1. Excavations
2. Leading edges
3. Open-sided floors
4. Uneven floors
5. Ramps
6. Roofs
7. Skylights
8. Ladders
9. Window ledges
10. Permit required confined spaces

The Facilities Management Group will ensure that work areas that have a potential for falls over 6 feet in height, within our facilities are evaluated, and that information concerning their hazards is transmitted to all employees.

The workplace will be assessed before each assigned job for potential fall hazards. Proper fall arrest equipment will be used for jobs requiring fall protection when elimination of the hazard(s) is not possible.

15.1 ASSIGNMENT OF RESPONSIBILITIES

A.

Supervisors shall be responsible for the following:

1. Responsible for ensuring that all requirements listed in the written policy for fall protection are met.
2. Responsible for ensuring new and existing employees are familiar with the fall protection policy as applicable to their job duties.
3. With the assistance of the safety office, are responsible for identifying fall hazards.
4. Responsible for arranging for required training of employees in fall protection and in the safe use of elevating personal platforms.

B.

The Occupational Safety Coordinator will be responsible for the following:

1. Responsible for conducting periodic visits to elevated work locations. The purpose of these visits is to inspect equipment and to observe employees' procedures while working at elevated levels.
2. Evaluate other elevated work locations identified by supervisors for fall protection requirements.
3. General oversight of this policy.

C.

The employees shall be responsible for the following:

1. Employees whose duties involve working at elevated locations are required to comply with the rules of operations and accepted safety practices outlined within this written policy
2. Employees are required to inspect their fall protection equipment before each use.
3. Employees are required to properly clean and maintain their fall protection equipment.

15.2 POLICY COMPONENTS

The following work situations are covered by this program for fall protection:

1. Ladders - fixed, free standing, temporary, or roll away type
2. Elevating Personal Platforms – scaffolds, aerial platforms, scissors lifts, forklift mounted platforms, cherry pickers, etc.
3. Elevated Surfaces – roofs (closer than 6 feet to the edge), catwalks, skylights, boilers, chillers, etc.
4. Vertical Opening - ground level entry into excavations, trenches, holes, pits, vessels, and other confined spaces. Fall protection is required whenever work is performed in an area 6 feet above its surroundings and can generally be provided through the use of fall protection systems.
5. Guardrails - Standard guardrails consist of a top rail, located 42 inches above the floor, and a mid-rail. Screens and mesh may be used to replace the mid-rail, so long as they extend from the top rail to the floor.
6. Personal Fall Arresting Systems - Components of a personal fall arresting system include a body harness, lanyard, lifeline, connector, and an anchorage point capable of supporting at least 5000 pounds.
7. Positioning Device Systems - Positioning device systems consist of a body belt or harness rigged to allow work on a vertical surface, such as a wall, with both hands free.

8. Warning Line Systems - Warning line systems are made up of lines or ropes installed around a work area on a roof. These act as a barrier to prevent those working on the roof from approaching it edges.
9. Covers - Covers are fastened over holes in the working surface to prevent falls.

15.3 FALL PROTECTION GUIDELINES

A.

The following are guidelines and requirements that must be met pertaining to personal fall arrest systems (fall protection equipment):

1. ***100-percent fall protection is required for all work six feet or greater in height*** where guardrail protection is not in place. Retractable life lines are required.
2. A safe means of access shall be maintained to structural activities. The use of aerial lifts as the sole means of access is prohibited. Climbing and sliding down columns is prohibited.
3. A guardrail system consisting of a top rail 42 inches (1.1 m) plus or minus 3 inches (8 cm) and mid-rail at least 21 inches (53 cm) high will be constructed at all unprotected sides, edges and floor openings where a recognized fall hazard to a lower level exists. The guardrail system will be capable of supporting 200 lbs. The guardrail system will have a toe board installed for the protection of those below when the system is greater than six (6) feet above a lower level. Wire rope guardrail systems will consist of a top rail, mid-rail and be flagged at not more than 6-foot intervals with high-visibility material. A minimum of three (3) U-bolt wire rope clips will be used and installed such that the "U" section is in contact with the dead end of the rope. Wire rope systems will be maintained to prevent deflection.
4. Roof work areas will utilize and maintain warning lines around all sides of low pitch roofs not less than fifteen (15) feet from the roof edge. No employee will be allowed in the area between the roof edge and the warning line without personal fall arrest system. Roof monitoring programs will be prohibited unless approved by the Safety Coordinator.
5. Prior to starting work, a written Safety Plan of Action that includes a project/task-specific fall protection plan must be prepared. This document shall be submitted to the Safety Coordinator for review.
6. All personnel utilizing fall protection must be trained in the equipment use and fall protection requirements.
7. Fall protection components are to be inspected and if necessary, removed from service per the manufacture's recommendations.

8. A means of notifying emergency personnel for the prompt rescue of employees in the event of a fall must be present on the jobsite. A means for promptly rescuing employees who have fallen must be determined before the work begins. This could include self-rescue if such means are provided.
9. NO part of any fall arrest system can be used to hoist materials.
10. Body harnesses, lanyards, lifelines, and all connect equipment must be removed from service after it has been involved in any fall incident. A competent person must inspect the equipment, and determine, if the equipment is undamaged and suitable to be returned to service.

15.4 COMPONENTS OF PERSONAL FALL ARREST SYSTEM

There are three vital components that make up a complete fall protection system. These are:

1. Anchorage points
2. Body support system
3. Means of connection

Each one must be in place and properly used to provide maximum worker protection.

While each of these components is vital to worker safety, the connecting device is the critical link in assembling a safe fall protection system since it bears the greatest force during a fall.

SEE FIGURE BELOW:


A
Anchorage/
Anchorage Connector
Anchorage: Commonly referred to as a tie-off point (Ex: I-beam)
Anchorage Connector: Used to join the connecting device to the anchorage (Ex: cross-arm strap)
B
Body Wear
Body Wear:
The personal protective equipment worn by the worker (Ex: full-body harness)
C
Connecting Device
Connecting Device:
The critical link which joins the body wear to the anchorage/ anchorage connector (Ex: shock-absorbing lanyard (shown), or retractable lifeline)
MILLER

A. ANCHORAGE AND ANCHORAGE CONNECTOR POINTS

An anchorage, is defined as, a secure point of attachment for lifelines, lanyards or deceleration devices. ANSI Z359 defines anchorage as a fixed structural component such as a beam, girder, column or floor that can support the forces exerted in arresting a fall, and introduces the term "anchorage connector" to refer to the component by which the connecting device is coupled to the anchorage.

It may be a beam anchor, cross-arm strap, D-bolt, hook anchor, tripod, davit or other secure device that serves as a point of attachment for lifelines, lanyards or deceleration devices.

Anchors and anchorage connectors must be independent and require the following:

1. Capable of supporting 5,000lbs per employee that is attached to that anchor point
2. They must be located high enough for a worker to avoid contact with a lower level should a fall occur.

B. BODY SUPPORT (HARNESS)

A body support, or body wear, is the component that is worn on or around the torso.

The two most common forms of body supports are:

1. Body belt
2. Full body harness

FIGURE 1:
Body belt

FIGURE 2:
Full body harness

FIGURE 1: A body belt is a belt that circles the waist and is used for worker positioning and fall prevention. A body belt

may be supplied with D-rings on the hips and/or middle of the back. A body belt must NEVER be used for personal fall arrest.

FIGURE 2: A full body harness is a body support device that distributes fall arrest forces across the shoulders, thighs and pelvis. Full body harnesses have a center back fall arrest attachment for connection to the fall arrest connecting device and may have other D-rings for use in worker positioning, fall prevention, suspension or ladder climbing.

C. MEANS OF CONNECTION

The connecting subsystem is the critical link which joins the body wear to the anchorage/anchorage connector. It can be an energy-absorbing lanyard, fall limiter, self-retracting lanyard, rope grab, or retrieval system.

The most common forms of connections are:

1. Lanyard equipped with an energy-absorbing element
2. Self-retracting lifelines (also known as Yo-Yo's)

FIGURE 1:
Energy absorbing lanyards

FIGURE 2:
Self retracting

15.5 FALL ARREST SYSTEM INSPECTIONS

A.

Fall arrest system (harness and retractable life line) will be inspected before each use by the user. Inspection shall include all buckles, webbing, leg straps, D-rings, etc.
Users should check the following items before using any fall arrest system:

1. Check for cuts, tears, corrosion, or anything that might lessen the integrity of the device
2. That the fall arrest system is designed to prevent the employee from falling more than 6 feet.
3. That the full body harness has the connection point in the middle of the upper back
4. Lanyards and vertical lifelines must have a minimum breaking strength of 5,000 pounds which will be indicated on the manufacturer's label.

15.6 TRAINING

A.

Training will be required for any employee before they are permitted to wear fall protection equipment.

Initial training will include the following, but not limited to:

1. Procedures for using fall prevention and fall arrest systems
2. Fall arrest equipment strength and limitations
3. Inspection, care, and storage of fall arrest equipment
4. Evaluation for methods to eliminate fall hazards
5. How to spot fall hazards in a work area
6. Types of fall protection equipment appropriate for use
7. Fall arrest anchor point capacity requirements
8. Procedures for removal of fall protection and arrest devices from service for repair or replacement.

B.

Refresher training will be conducted on a semi-annual basis or when the following conditions apply:

1. There has been a change in the employees job assignments
2. There has been a change in the type of fall protection equipment used
3. There is a known hazard added to the work environment which affects the fall protection program.
4. whenever a periodic inspection reveals, or whenever this employer has reason to believe, that there are deviations from, or inadequacies in the employee's knowledge or use of fall protection equipment or procedures

C.

Training must be recorded for each employee who is trained on the use of fall protection equipment. This record will be maintained in the safety office.