Beginners Guide to Fall Arrest Systems

Workplaces today are full of opportunities for workers to be exposed to fall hazards. Many of these exposures are so significant that workers could be killed.

There are typically three schools of thoughts – fall management, fall restraint, or fall arrest.

Controlling these hazards and preventing injuries must be the goal each day. Fall management is the best option and is when all possible exposures to falls are identified, a plan put in place, and the risk controlled thus managing all fall exposures. Fall restraint is when an employee is prevented from falling by a predetermined distance to get to the edge, but not go over the edge thus restraining the worker to a safe working area. Fall arrest is the final option and is when an employee is able to take the fall but the fall is arrested by properly established equipment.

The Full Body Harness

- A personal fall arrest system consists of three essential components: a full body harness, a connecting device, and an anchor point.
- Before using a harness, it must be thoroughly inspected. Check for deformed or bent buckles or D-rings, frayed or torn stitching, and damage to the harness' webbing.
- Hold it by the D-ring located on the back of the harness and gently shake it so the harness falls into shape.
- During a fall, a properly worn body harness will help distribute the forces generated by the fall to various points on the body.

Connecting Devices

- Use a connecting device, often called a lanyard, to attach your body harness to an approved anchor point.
- The single lanyard is the most common connecting device, but there are also Y-strapped lanyards that allow movement between anchor points, and retractable lanyards that limit the distance of a fall.
- An "energy-absorbing" lanyard often called a "shock-absorbing" lanyard. This type of lanyard is designed to absorb the energy of a fall by stretching and elongating a specially designed segment; the amount of elongation is limited to 3½ feet.
- Most lanyards are not designed to be passed over an object and connected back into itself.

The Anchor Point

- Regulations require that an anchor point used as part of a fall arrest system be able to support 5,000 pounds.
- Conduit, hand rails, and similar items aren't strong enough to be used as anchor points.
- Allowing the anchor point to be below the height of your D-ring adds additional distance to the length of your fall.

Calculating the Total Fall Distance

- The main point of using a personal fall arrest system is to prevent you from hitting the ground. This is why you must be able to calculate the total fall distance of any potential fall.
- The total fall distance is the maximum distance a worker will fall from the anchor point. To calculate this distance, add your height, plus the lanyard length, plus the maximum elongation length of your connecting device.