Safety Issues
Fall Protection

Tech Tip

There are three common methods of Fall Protection:

- Fall Prevention
- Work Positioning
- Fall Arrest

When we think of Fall Protection, we often think only of Fall Arrest and the need for a 5,000-pound lanyard tie anchorage.

This isn't correct.

Fall Protection involves many systems which can be used to prevent you from falling to a lower level. There are three methods of Fall Protection: Fall Prevention, Work Positioning and Fall Arrest.

Let's explore each of these Fall Protection methods and how to use them to keep you safe while working at elevations.

1. Fall Prevention

A. Guardrail System

Safway's Safety Rules require that you install and use guardrail systems on all open sides and ends of scaffold platforms. Both a toprail and midrail are required.

OSHA rules allow cross braces to be used as either top rail or mid rail, depending upon the height of the cross. When using 6-foot 4-inch scaffold frames, the cross can be used as a top rail, but a mid rail must be added.

When evaluating fall protection methods, fully planked platforms and guardrail systems should be your first choice. In addition to allowing freedom of platform movement, properly installed and properly used guardrail systems on supported scaffolds don't require the use of additional safety equipment while working on the platform. They don't require the need for fall arrest anchorages either.

Uses:
Scaffold erectors should consider using a platform and guardrail system when they are passing material (such as a daisy chain) or when using adjacent scaffold to erect or dismantle additional scaffold.

B. Tether System

A tether is a rope system that is fastened at one end to a harness and to an anchorage on the other end. When using a tether, the anchorage must be strong enough to resist body movement to prevent you from approaching the edge of an unguarded elevated surface. A tether doesn't arrest a fall – it prevents a fall.

Uses:
In the scaffold industry, tethers are most commonly used on roof structures while rigging suspended scaffold (when roof edges are unprotected).

2. Work Positioning Systems

A Work Positioning System secures a worker to a location, thus protecting the worker from falling. A good example of a Work Positioning System is the device used by line men to secure themselves to poles while making connections. A Work Positioning System consists of:

a. a lanyard

b. a harness

The work positioning harnesses are equipped with "D" rings on each body side at waist level. These "D" rings are used to attach the lanyard from one side of the harness, around an object, and back to the other side of the harness.

When deciding to use Work Positioning to provide fall protection, the length of the lanyard is critical and must remain short to limit movement. In general the lanyard must be just long enough to pass from one "D" ring around an object to the other "D" ring without leaving slack in the rope.

Uses:
Work Positioning Systems are used in the scaffold industry when lifting materials while standing in a daisy chain and a planked guarded area is not available.

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3. Fall Arrest System

A Fall Arrest System consists of:

a. a full body harness

b. a lanyard short enough to limit a fall to six feet

c. an anchorage

Both the lanyard and anchorage can vary in description. Lanyards for instance can be a fixed length or variable and are retractable. The lanyard anchorage can be a fixed termination or a rope grab attached to a vertical or horizontal life line, which is attached to a fixed anchorage.

The entire Fall Arrest System must be capable of resisting the shock load caused by a fall. Both OSHA and ANSI rules require that these anchorages be capable of supporting at least 5,000 pounds per worker attached.

In the case of specially designed systems, the anchorage must be designed to resist at least two times the arresting force.

When using Fall Arrest Systems, one end of the lanyard must be attached to the "D" ring located on your harness in the middle of your back. The other end is attached, preferably above head level, close to your body. Care must be taken not to move away from your anchorage.

The further you are horizontally from the anchorage, the further you will swing if you fall. Impacting an object during a "pendulum" fall could cause serious injury, even if your Fall Arrest System contains a shock absorbing device.

Do not attach your Fall Arrest System to a free standing scaffold. The arrest force from your fall could overturn the scaffold. If a Fall Arrest System is to be anchored to a tied scaffold, the Fall Arrest Anchorage and the Fall Arrest System must be designed by a qualified person.

Uses:
Fall Arrest Systems are used in conjunction with suspended scaffolds, on unguarded structures or other surfaces where a fall is possible, and a 5,000-pound anchorage is available.

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