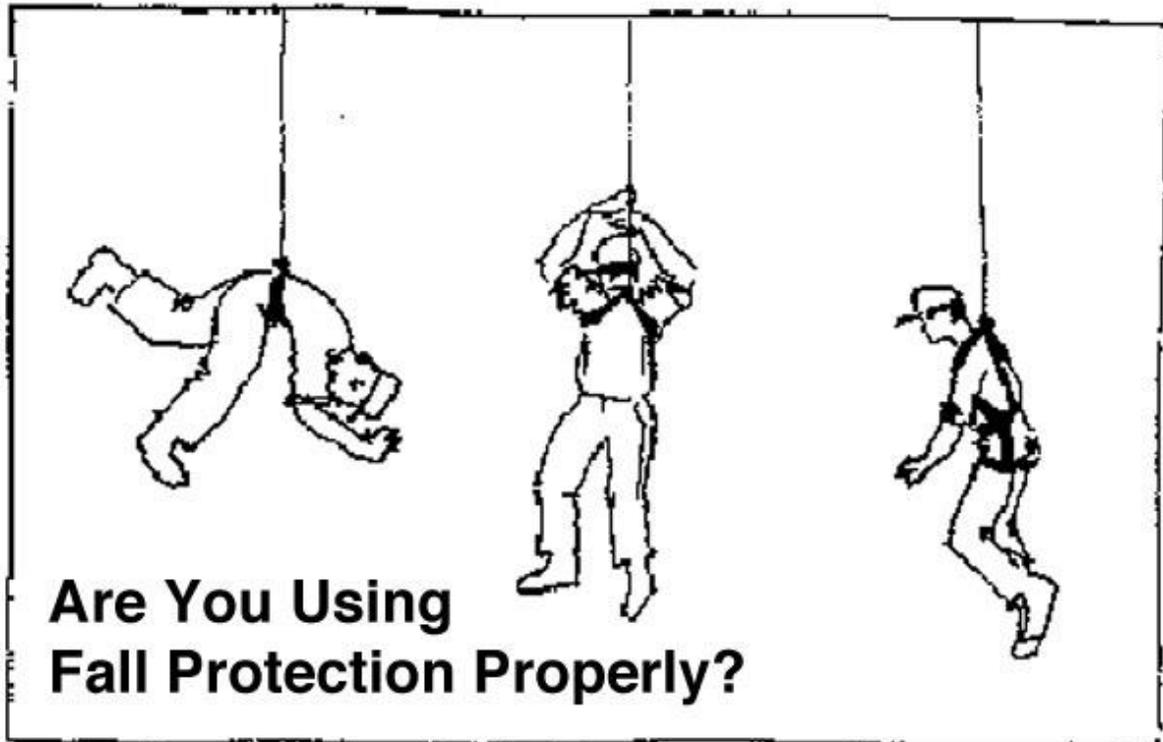


Are You Using Fall Protection Properly?



Nothing could be worse in safety than a false sense of security. Somebody who believes they are protected by a certain piece of equipment might take more chances – even unknowingly – than they would if they believed they had no protection at all. Yet, we see it every day: [a railing that isn't secured](#), a body harness that doesn't fit properly, a respirator that hasn't been fit to the user's face. These are just a few examples, but there are countless others out there.

Proper Training

While this is a dangerous phenomenon regardless of which hazard is supposedly being abated, it is particularly deadly when dealing with fall protection. One mis-step could cost an employee their life if they are not properly protected. So, have your workers been trained? Do they even know if they are using their fall protection properly?

To determine this, we first must give a brief rundown of what fall protection is. Usually, when employees are told that fall protection is required, they automatically refer to it as being “tied-off”, but being tied-off is just one way of achieving fall protection. Actually, there are two types of fall protection: fall prevention and fall arrest.

Fall Prevention vs. Fall Arrest

Fall prevention includes, but is not limited to, solid rails, wire rope rails, and even travel restraints (harnesses attached to lanyards that do not let you reach the edge from which you could fall). Fall arrest is what employees often mean by “tied-off” – a [harness](#), [lanyard](#), and [anchor point](#).

Let’s focus on this grouping, known as a Personal Fall Arrest System (PFAS). When using a PFAS, the first thing you, as a worker, are going to do is put on your harness. There is a lot of room for mistakes here. Somebody who has never worn a harness before or has not been trained in the proper way of using one might pick one up, stare at the jumble of straps and buckles, and feel completely lost. Maybe they’ll ask for help, but it’s likely they’ll struggle through, do their best to put the harness on, and get

it completely wrong. This leaves them dangerously unprotected. Workers MUST be trained in the proper use of the fall protection they will be using, as well as the fall hazards they will face.

Proper Harness Usage

Once trained, the first thing that MUST be done when donning a harness is to inspect it. Whether you ever actually fall or not, you must treat this piece of equipment as if it is going to save your life EVERY time you put it on. Check every strap for signs of wear, every buckle, every plastic fitting, every grommet. Check the tag to find out when it was last inspected by your company's competent person. If you feel the harness is good for use, then it's time to put it on.

The easiest way to orient the harness is to grab the D-ring (obviously if it is a harness with multiple D-rings, we are talking about the one that goes in the middle of your back) and let the harness hang. This will give you a better idea of where the shoulder straps, chest strap, and leg straps are. Step into the leg straps (unless they are the type with grommets that you will secure later) and put the straps over your shoulders. Connect the chest strap. Before going any further, have a second person check the harness. You don't want any twists in the straps and there is no way you can see everything behind you. **This is a step that is OFTEN skipped.**

Now that you've got the harness on, you need to adjust it. How often do you see the construction worker with the leg straps of their harness dangling a foot below their groin? Or a D-ring either at the small of a workers back or

being pulled over to the side? How often are buckles not buckled? By treating this as a dog-and-pony show, you put yourself at serious risk. Leg straps that are too loose can shoot upward in a fall, rupturing testicles. A loose chest strap could allow you to shoot right out of your harness in a head-first fall, like a sausage being squeezed from its casing. Straps that are too tight could cut off circulation. It is imperative that all adjustments be properly made. For the leg straps, the one adjustment that seems to be wrong most often, use this rule of thumb: once adjusted, you should be able to slide an open hand between the strap and your leg, but not a closed fist. Once you've made all of your adjustments, tuck the ends of your straps into the provided fasteners. You don't want a piece of the harness flopping around either to be caught in a piece of equipment or to be knocked loose.

Proper Lanyard Usage

Now, if you've done this correctly, you're ready to attach your lanyard. However, do you know which lanyard you should be using or did you just take whatever was in the gangbox? Before selecting your lanyard you need to ask one simple question: how high above the lower level is my anchor point? The last thing you want to do is to think you are protected, only to discover that when fully deployed, your PFAS allows you to strike the lower level. I've seen workers ten to twelve feet off the ground using 6' lanyards with deceleration devices. If they had stopped to calculate their fall distance, they would have realized that they actually needed 6' for the length of the lanyard, plus 3.5' for the length of the deceleration device once deployed, plus 1-2' of sag in the system/harness, plus 4-5' of body length

below the D-ring. That's 15.5-16.5' of clearance needed from the anchor point. Of course, it doesn't hurt to add a little extra to be on the safe side. I personally do not allow the use of 6' lanyards with deceleration devices unless the anchor point is at least 18' above the lower level. If you don't have this distance available, you need to look at other options, such as a retractable lanyard or railings. Retractable lanyards will lock within a few feet of detecting a fall.

If you've selected the proper lanyard, is it attached properly? For a [lanyard with a deceleration device](#), you want to ensure the deceleration device is attached to your D-ring. This will help to ensure that nothing interferes with its proper deployment. For a retractable, the casing should be attached to your anchor point. If you've got a lanyard that looks like a bungee cord, it can be worn either way. Just ensure the lanyard you are using has never been deployed. That's easy for a deceleration pack because you would be able to see that it was open, but for a bungee-style cord, you may not be able to tell. In order to find out, at one end you will notice a red tag tucked into the webbing. If this is out, the lanyard has been involved in a fall and must be taken out of service. Retractable have different ways of notifying you, so make sure you check the user manual to know exactly what to look for during inspection.

Proper Anchor Point

So you now have your harness on properly and have selected the appropriate lanyard. What do you tie-off to? Will any pipe do? OSHA states that “Anchorages used for attachment of personal fall arrest equipment shall be...capable of supporting at least 5,000 (22.2kN) per employee attached.” [[29 CFR 1926.502\(d\)\(15\)](#)]. Five-thousand pounds per employee attached. If you are not using structural steel or an engineered anchor point (such as in an aerial lift or on a device manufactured for fall protection), you need to know for sure that the anchor point is sufficient. This must be done by a ‘qualified person’ which is normally interpreted in this situation as a registered professional engineer.

Proper Fall Clearance

In addition, your anchor point should limit your free-fall distance to 6’ or less. If you are using a 6’ lanyard with a deceleration device and you are tied off at your feet, you will free-fall more than 10’ before the deceleration device engages (6’ length of the lanyard plus at least 4’ from your feet to the D-ring). This will place dangerous forces on your body’s internal organs. Always look for an anchor point that is at least level with your D-ring. If this is not feasible, other alternatives must be considered, such as railings, retractable lanyards, nets, etc. (some manufacturers do produce lanyards that allow a 12’ free-fall while keeping the forces below acceptable levels, but standard lanyards allow for 6’).

Real Fall Protection

As you can see, it's not as simple as throwing your harness on and going to work. Not if you want to be protected. Following all of the steps listed above helps you to work safely at heights, but nothing is as important as good training – which is required by OSHA for anybody using fall protection [29 CFR 1926.503]. And, remember, when you are provided with a harness, a lanyard, and an anchor point, use them. Wearing your harness and hooking both ends of the lanyard to it does you no good in a fall. Many workers have died while wearing harnesses and lanyards simply because they never hooked their lanyard to the anchor point. In the end, there's only one person who can be fully responsible for your well-being: **YOU!**