



Employee Safety

How to Choose the Right PPE: Fall Protection Harness

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What You Need to Know:

In general industry, the standard requires fall protection for users who are working over 4 feet with an unprotected edge.

A written Fall Protection Safety Plan should describe the safety measures to be used and designate a competent person who is responsible for implementing those measures, selecting the body harnesses and other fall protection equipment and training employe

Fall protection harness selection becomes more challenging if you take into consideration all the aspects related to working at different heights.

Beyond the standard harness, there are a number of specialty harnesses available, depending on the type of work being done.

Fall protection equipment deteriorates over time, so it's important to routinely inspect it for wear and damage.

Guarding employees from fall-related injuries is more complex than you might think. Use this PPE guide to help understand OSHA and other general industry standards on harnesses.

Fall protection is the No. 1 violation on *OSHA's "Top 10" list* for FY2017—and has been a steady contender for that position year after year. In an attempt to reduce workplace injuries and deaths due to falls, OSHA *finalized an update* to regulations covering personal fall protection systems for general industry at the end of 2016.

According to a *release* from OSHA, the final rule “eliminates the existing mandate to use guardrails as a primary fall protection method and allows employers to choose from accepted fall protection systems they believe will work best in a particular situation.”

“In the past the general industry standard was very vague, and in many cases it referenced the construction standard for fall protection,” says Andrew Comiskey, a fall protection specialist for Honeywell Miller.

Comiskey says the latest WWS (Walking Working Surfaces) standard better mirrors the construction standard. In general industry, the standard requires fall protection for users who are working over 4 feet with an unprotected edge.

“Basically anytime folks are working at height, you first want to try to engineer out the hazard by putting up handrails and guardrails, or change the work so it doesn’t take place in a hazardous location,” Comiskey says.

“If handrails aren’t feasible, you need to implement a fall restraint system, and if you can’t do that, the last option is a fall arrest system, which requires a body harness,” he says.

Safety Managers: Follow a Written Fall Protection Plan

Once a specific fall hazard has been identified by an employer, a written Fall Protection Safety Plan should be created. The plan should describe the safety measures to be used and designate a competent person who will be responsible for implementing those measures, selecting the body harnesses and other fall protection equipment, training employees in fall protection and the use of equipment, and supervising employees to ensure that the plan is carried out.

Comiskey says fall protection encompasses three basic components, including an *anchor* (A), body wear, or *harness* (B), and *lanyard or retractable connector* (C). A fourth component, the rescue descent (D), should also be included in the written plan.

“Fall protection has many facets, and the competent person will have to understand what type of work is being done and what type of protection is needed,” Comiskey says. “Then within that, they must determine what type of protection is best suited to each specific activity.”

How to Choose a Fall Protection Harness

Selecting the right *fall protection harness* could be simple in some cases. For example, if maintenance employees are only going up every six months to change a lightbulb, they probably need just a standard harness, Comiskey says.

However, the selection becomes more challenging if you take into consideration all the aspects related to working at different heights, he says.

“If an employee is performing standard maintenance work, working on an aerial lift (scissor lift or boom truck), a standard D-ring harness could be just fine,” Comiskey says. “But if the worker needs to climb and needs somewhere to put their tools, an integrated tool belt would come in handy to hold tool pouches.”

Tool lanyards are also available to tether tools to the belt, in order to prevent them from dropping on people below, which could cause injury or even death, or forcing the worker to climb down and get them, which decreases productivity.

Choosing a Safety Harness Style: Standard or Specialty?

“All standard harnesses will have a dorsal D-ring for fall protection, located between the shoulder blades, and in some cases customers will also want side D-rings for positioning,” Comiskey says. “Some customers also choose to have a chest D-ring, used for ladder climbing or shoulder rings for easier rescue from confined-space work.”

Beyond the standard harness, there are a number of specialty harnesses available, depending on the type of work being done.

“If employees will be working with a lot of chemicals or paints, they may choose a vinyl-coated harness

versus the traditional Dacron polyester material used for standard work,” Comiskey says. Vinyl-coated harnesses are also used in nuclear plants, food processing plants, concrete plants and sewers—any place that material could get into the webbing, requiring a washdown, he says.

Other specialized harnesses include welding harnesses, typically made out of Nomex Kevlar, which is very heat tolerant compared with Dacron. Specialty harnesses are available for other specific trades, including tower climbing (cell, power), which incorporate different types of loops for tools and a sling or bosun’s chair to sit in.

Beyond these different models, employers can choose to spend a little more money for harnesses that are lighter in weight and use advanced technologies that make them easier to wear and to put on and take off.

What Are Safety Experts Being Asked About Fall Protection?

“The most frequent requests that I see around fall protection involve training,” says Sara Hestand, safety specialist for MSC in the Midwest. “Customers are looking for basic user training on-site, which can be offered in a wide variety of formats. Recently, I have had many customers reach out regarding training on inspection for fall protection equipment and regarding inspections and certifications of harnesses.”

Hestand, who is a Certified Safety Professional Master and has worked for MSC for the last eight years, was recently featured in a **Q&A article** on top safety issues she encounters in the field around the OSHA “Top 10” list.

“For fall protection, if a business does not have a trained, competent person on-site, that could be dangerous,” Hestand explains. “There are many resources available that will come on-site or offer free training regionally. By joining **professional associations**, they can attend presentations, receive updates and take advantage of training opportunities.”

How to Inspect a Fall Protection Harness

Fall protection equipment deteriorates over time, so it’s important to routinely inspect it for wear and damage.

“All employees are actually required to inspect a harness every time they put it on, and OSHA requires that they are trained in what to look for,” says Brandon J. Hody, a safety and occupational health professional at Concurrent Technologies Corp.

“One of the better practices is to create a checklist out of the harness manufacturer’s instructions and require each employee to go through that list daily and sign off that they’ve looked at each item,” he says.

The list should include which components need to be inspected, what specifically to look for, and what kind of things should lead to removing that harness from use, according to Hody.

D-rings and buckles are made of metal, and any sharp metal edges could cause frays or rips on webbing or straps. Other things to watch for include corrosion, deformation, pits or burrs, cracking or

rusting of metal parts, frayed or broken stitching, and discoloration of pads, he says.

“One of the requirements is that if labels are missing or illegible, you have to remove that harness from service,” Hody says.

“Some of the harnesses have an impact indicator, which is designed to rip open if someone falls wearing that harness,” he says, “so if the impact indicator is ripped or stretched, you have to remove it from service.”

At that point, the harness must be inspected by an authorized party to make sure it can stand up to the rated amount of stress.

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Andrew Comiskey

Fall Protection Specialist, Honeywell Miller

How to Correctly Wear a Fall Protection Harness

Once a harness has been inspected, employees need to be trained on how to put it on and how tightly it should fit. Hody suggests first holding the central D-ring on a finger and letting the harness hang down, to get oriented to where the arm and leg straps are supposed to go. Then start by buckling the leg straps, followed by the shoulder straps. The last step is buckling the chest strap.

“Most of the time you’ll notice the harness is not on right if your chest strap won’t come together,” Hody says.

This could happen if the D-ring is positioned too low on the back or off to one side, a buckle is not buckled correctly or the legs are in the wrong straps.

Hody says that once the harness is in place, you should be able to slide an open hand through the straps, but not a closed fist.

“You want the straps tight but not too tight because they can cut off circulation, especially if someone falls and is hanging on the harness for too long,” Hody says.

There should be no twists in the straps, and they should wrap around and secure like a seat belt, lying flat and straight. Strap ends should be tucked into the fasteners, so they don’t get caught on equipment.

Employees should look to their co-workers for help in ensuring the harness is on correctly.

“If you have a good safety culture in your workplace, and as long as the employees are all trained to inspect and know how to wear the harness correctly, an employee should be able to tell a co-worker that a strap is twisted, or they need to tighten up the legs or their D-ring is off-center,” he says. “Most people would thank them and maybe ask for help to fix what’s wrong.”

Do you understand how to choose the right fall protection harness for the job? Tell us what you need to know.