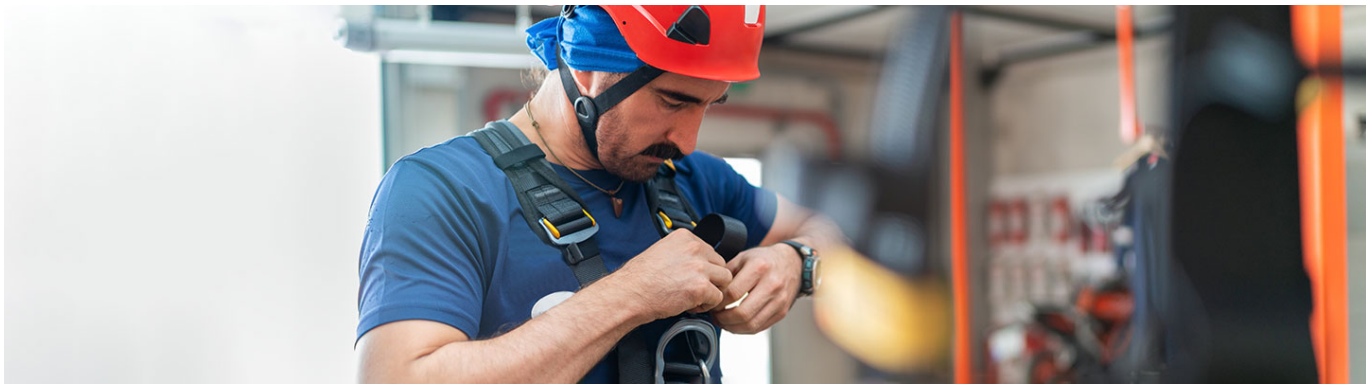

Fall Protection and Training

Workplace Falls: 3 Critical Points to Prevent OSHA's Top Violation

Matt Morgan | Feb 23, 2023

Falls are a pervasive problem in manufacturing, one with costly consequences. General fall-protection violations are by far the most frequently cited and heavily fined by the Occupational Safety and Health Administration—and have been for the past 12 years.

"I think fall protection has been at the top of the list for a while because it's a very obvious item. It's very visible, and it's one of the leading causes of death in the workplace," Thom Kramer, managing principal for engineering firm LJB Inc. and chair of the ***ANSI/ASSP Z359*** fall protection and fall restraint standards committee, ***told the American Society of Safety Professionals***.

Regardless of why there are so many fall protection violations, it's clear that manufacturers could do more to increase fall protection at their facilities.

The manufacturing industry saw 55 deaths from slips, trips and falls in both ***2020*** and ***2021***, according to the Bureau of Labor Statistics.

Specifically, manufacturers can improve their operations—and avoid OSHA citations—by focusing on three key components of ***fall-protection solutions***: harnesses, lanyards and lifelines, and anchorage.

Body Support: Harnesses

One key component of fall-protection solutions is the harness, which is worn by a worker to stop a fall. ***A number of suppliers provide harnesses*** of varying types that will depend on the nature of the work that's being done.

For general work performed at height, a standard harness might be suitable, comprising shoulder straps, a chest strap, leg straps and a D-ring between the shoulder blades. For specialty work, additional harness features could be beneficial, such as integrated tool belts, additional D-rings for stability, or specialized construction materials or coatings.

> **"One of the critical components to putting on the harness is to make sure everything is in line. Usually a good rule of thumb is grabbing it by the back D-ring, shaking it a couple times, and you can see all your buckles are aligned."**
> Bruno Cunha
> MSC

Before each use, the worker should inspect the harness to make sure it's in good order and identify as early as possible when it's time to replace. Brandon Hody, a safety and occupational health professional at Concurrent Technologies Corp., ***recommends creating a checklist*** based on manufacturer's instructions.

The harness must be taken out of use if there is loose stitching, missing labeling or inspection logs, rusting or deteriorating metal components, or torn stress indicators.

Read more: Workplace Fall Protection: How to Use a Safety Harness and Lanyard

With the equipment inspected, make sure it fits securely.

"One of the critical components to putting on the harness is to make sure everything is in line" and straps aren't twisted, ***says MSC Industrial Safety Consultant Bruno Cunha***. "Usually a good rule of thumb is grabbing it by the back D-ring, shaking it a couple times, and you can see all your buckles are aligned."

For six steps to follow to properly fit a full-body harness, ***refer to this graphic***. When the harness is secure, the worker should be able to stand up straight and the D-ring should sit squarely between the shoulder blades.

WATCH: Discover the do's and don'ts of implementing a fall-protection program from MSC Industrial Safety Consultant Bruno Cunha:

Connection: Lanyards and Lifelines

Another vital component of a fall-protection solution is the lanyard or lifeline, which can be a lifesaving connection for anyone working at height.

One type of lanyard is designed to prevent a fall from occurring, by limiting the worker's movements on a raised work surface and keeping the person away from a potential fall area.

Another category of lanyard, which includes lifelines, is designed to stop (or arrest) a fall the instant after it occurs.

Lanyards have a fixed length, precisely measured based on the particular application of a job site and taking into account the nearest obstruction below. Lifelines are self-retracting, contained within a housing. Lanyards and lifelines attach on one end to the D-ring of the harness and on the other end to an anchor point (see the next section).

Read more: How to Immediately Improve Fall Protection

As with a harness, it's essential that the lanyard or lifeline be inspected regularly—before each use is a best practice—for damage, including cuts and other signs of wear and tear. Anything showing damage or wear should be removed from use.

Lanyards and lifelines usually have energy-absorbing properties. A lanyard, for example, could have webbing that stretches or rips open to limit impact on the worker's body. Lifelines have a braking system to quickly decelerate a worker's fall over a short distance.

Fixed Point: Anchorage

An anchorage, the third key component of a manufacturer's fall-protection solution, is the fixed point to which the lanyard or lifeline is connected and ultimately what stops the worker from falling.

Lydia Baugh, former marketing and communications director of the International Safety Equipment Association, ***contributed this to Better MRO***: "***ANSI Z359*** defines anchorage as a fixed structural component such as a beam, girder, column or floor … and introduces the term 'anchorage connector' to refer to the component by which the connecting device is coupled to the anchorage."

Both the anchorage and the anchorage connector—which can be a "beam anchor, cross-arm strap, D-bolt, hook anchor, tripod, davit or other secure device that serves as a point of attachment," Baugh wrote—must be independent and capable of supporting at least 5,000 pounds for each employee attached or maintain a safety factor of at least two, according to ***OSHA regulations***. The 5,000-pound minimum is based on a calculation of the weight of the worker and the distance of the fall.

Read more: Better MRO's article library on fall protection and training

The second part of OSHA's regulation—the safety factor of two—opens the possibility for manufacturers to use anchor points that support less than 5,000 pounds but also may require more than 5,000 pounds, safety expert Daniel Huntington explained in an ***article for Occupational Health & Safety magazine***. He was quick to point out that the capability requirement must be measured and documented.

"Whether reducing the capability requirement of an anchor point for use with a fall arrest system or increasing it due to a heavy worker or higher free falls, it is vital that you don't guess at capacities and imposed forces," he wrote. "Rather than make assumptions, check the manufacturer's paperwork and technical specifications to see what the exact numbers are. If that doesn't provide the answers you need, have a qualified person perform the necessary calculations to determine if what you plan to do is sufficient."

