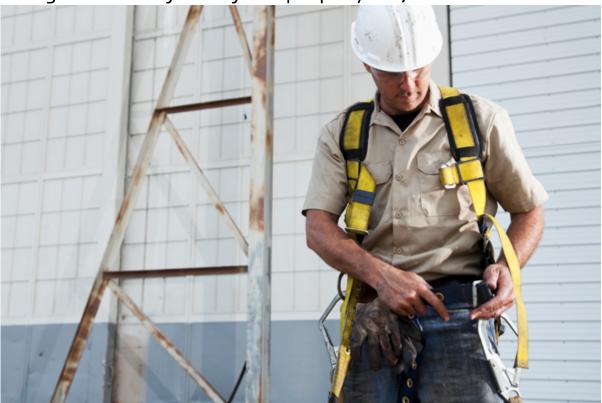Personal Protective Equipment

Harness Safety Includes Proper Selection, Fit and Use

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Fall Protection Equipment Prevents Injuries and Saves Lives

Fall protection is the leading liability risk in the Occupational Health and Safety Industry. Since everything from harness construction to harness components can be compared and contrasted, selecting the proper harness to protect your workers can be a confusing process. To help you make an informed decision, here are some tips from safety directors and product managers on questions to ask before you invest in equipment.

Harness Selection

How Safe Is a Full-Body Harness?
Surprisingly, some brands of harnesses do not meet basic safety standards. Before purchasing fall protection products, request written proof from the manufacturers for the following items:

Q: Are the products manufactured in an ISO 9001 facility?
A: ISO 9001 certification proves a facility meets strict international standards and represents consistency in the manufacturing process. Quality-conscious manufacturers strive to produce reliable products – demand the best.

Q: Do the products meet ANSI standards?
A: Product labeling is not enough. Not all ANSI-labeled harnesses meet ANSI Z359.1 and ANSI A10.14. If

products are tested and pass the standards, a manufacturer will not hesitate in supplying the test results / documentation. Remember, ANSI Standards are not regulated but self-policed. Insist on written proof.

Q: Does the fall protection manufacturer have a Statistical Process Control (SPC) program?
A: Fall protection products are only as good as the quality of the raw materials/components. Expect the best.

Q: Does the manufacturer utilize independent, third-party testing?
A: Reputable manufacturers are often members of the Safety Equipment Institute (SEI) or utilize the services of other independent test labs that provide written test results/certification. Ask for written proof of certification.

Q: Does the manufacturer have qualified engineers designing/testing products in an in-house testing facility?
A: Ask for documented results for dynamic drop tests and static load tests. Without testing facilities, how can a manufacturer validate labeling that implies that products meet industry-accepted standards?

Harness Comfort

Comfort and fit affect the safety and use of a harness – influencing compliance. If fall protection equipment is difficult to don and hard to adjust, it won't be used. With comfort in mind, workers use several different types of harnesses but the majority prefer full-body harnesses with stretchable webbing that allows them to flex and bend.

Harness Features A full-body harness includes hardware, webbing and pads with specific functions.

Hardware must be sturdy, but not oversized and awkward. At the same time, the hardware should easily attach to connecting devices. For example, the back D-rings on some harnesses are so small that hooking a lanyard can be a tricky process. Harness hardware must also be smooth because it can pose a hazard if it has sharp edges that cut into harness webbing or dig into the skin in the event of a fall.

Hardware construction is an important feature specifically in friction buckles. If friction buckles are not spring-loaded, they can easily begin to loosen once the harness has been adjusted to fit properly. Also, be aware of hardware with exposed springs, especially on friction buckles. These can easily be disabled or dislocated.

Webbing varies drastically from brand to brand. Look for sturdy webbing with tightly-woven yarn that slides through hardware without snagging. Once webbing is cut, burned, frayed, etc., the harness must be taken out of service.

When choosing webbing, keep in mind that it should meet the ANSI standard of 5,000 lbs. tensile strength. Stitching should have enough strength that it does not rip away during a fall, and the webbing should endure traditional abrasion tests without fraying and puckering.

Since webbing will be used in sun, heat and moisture over extended periods of time, it should resist natural weather effects. Similarly, in an electrical environment, webbing must resist conductivity, and in a harsh chemical environment, webbing must resist toxic chemical fumes and splashes.

Padding should be pliable and easy to adjust to ensure a comfortable fit. Like webbing, padding must withstand harsh weather and maintain its shape. Some padding can become brittle in cold weather, so look for padding with breathable fabric and durable construction.

Critical Components, Critical Fit

While safety directors agree a comfortable fit is crucial to compliance, some workers lose sight of how important it is to follow directions when it comes to ensuring a snug fit with chest, back D-ring and leg straps. In many instances, workers wear harnesses far too loose.

Placement and connection of the chest strap and back D-ring critically affects harness fit and safety. It is vitally important that chest straps are positioned in the mid-chest area, and back D-rings located in the middle of the back between the shoulder blades. Both must be tightened for a 'snug' fit.

Chest straps should be easy to adjust, but must withstand fall forces without tearing or breaking during a fall. If a chest strap is not fastened properly, it can slide up around a worker's neck after a fall.

To provide easy and proper chest strap adjustment, fall protection manufacturers use a variety of connecting devices from metal hardware to Velcro straps. Metal chest hardware is the preferred choice for greater safety, consistently meeting 4,000 lbs. of 'pull force' when tested. Velcro has the potential to collect dirt, which can affect its 'holding power' and result in serious injury in the event of a fall.

Appropriate harness sizing influences compliance, as well. Some manufacturers rely only on universal sizing with harnesses that fit almost everyone.

To accommodate all employee shapes and sizes, some manufacturers offer more than 30 styles and designs developed specifically to meet the needs of today's workers.

Clear Instructions Encourage Safe Harness Use
It sounds too simple to address, but clear, easy-to-read instructions should accompany every harness. Ideally, instructions should be available in more than one language with English, French and Spanish versions as the most common. All instructions should include explicit guidelines for usage, maintenance and inspection.

It All Adds Up to Safety

Finally, when purchasing a harness, make sure you are buying the correct harness for the appropriate application. Remember, employees will more readily and properly wear a comfortable harness that easily adapts to lanyards and other connecting devices. The better the harness, the better your company's chances of employee compliance, and that increases safety and reduces liability risk. Most importantly, it saves lives.

Building an enduring culture of safety can be the most cost-effective and proven accident-prevention process. Creating and internalizing this culture is the most successful way to minimize costly injuries and maintain a safer, more productive and engaged workforce. Honeywell Safety Products knows that building a safety of culture is not just a set of rules; it's a new philosophy of preventing injury in the workplace. Safety is no longer something defined and enforced by management,; rather, it becomes the right and responsibility of each and every employee. A culture of safety refers to the extent to which individuals and groups commit to personal responsibility for safety; act to preserve, enhance and communicate safety concerns; strive to actively learn, adapt and modify behavior based on lessons learned from mistakes; and strive to be honored in association with these values. A culture of safety exists when safety is everyone's priority and workers make safe choices on their own.

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