



HOW TO BE HANDS-FREE:

SOLUTIONS TO HELP YOU CLIMB SAFELY TO HEIGHTS

AN ERGODYNE WHITE PAPER

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Hands-free is a popular concept in communications safety. Theoretically, drivers can maintain full concentration and control when they have both hands on the wheel and aren't clutching a cell phone in one hand.

Moving from one place to another with free hands can also prevent worksite falls. Most workers were trained to climb with the "Three Points of Contact Rule"¹ in mind. That is, keeping both feet and one hand (or both hands and one foot) in a stable position while one hand or foot is in motion. So both hands are free to grasp and hold railings or ladder rungs. The practice is fundamental for climbing to work at elevation or any place with railings.

Those who work with their hands usually have something in their hands. So they need a way to carry their stuff – tools, equipment, lunch and hydration – to and fro on their job site. While this isn't typically a problem for travel on smooth surfaces, not all walking/work surfaces are smooth, level, uniform or horizontal.

// SHIFTED STANDARD

OSHA recognized this when the federal agency revised its *Walking-Working Surfaces and Fall Protection Standards*:

"Falls from heights and on the same level (a working surface) are among the leading causes of serious work-related injuries and deaths. OSHA has issued a final rule on Walking-Working Surfaces and Personal Fall Protection Systems to better protect workers in general industry from these hazards by updating and clarifying standards and adding training and inspection requirements."

"OSHA estimates that these changes will prevent 29 fatalities and 5,842 lost-workday injuries every year."²

A key component of this standard points to the importance of climbing technique in safety, tying back to the "Three Points of Contact Rule." The requirements in section §1910.23 *Ladders state*:

- » (11) Each employee faces the ladder when climbing up or down it;
- » (12) Each employee uses at least one hand to grasp the ladder when climbing up and down it; and
- » (13) No employee carries any object or load that could cause the employee to lose balance and fall while climbing up or down the ladder.³

Worksite surfaces can be sloped (roofs), elevated (scaffolds or catwalks), subterranean (utility vaults), or even vertical (towers, utility poles and suspended) and may require a climb to access. With these circumstances in mind, how do you transport your tools and gear while following the "hands-free" technique called out in OSHA standards?

// BUCKET LIST

The answer? In hoist buckets, topped tool pouches and tool holsters.

Items such as backpacks, totes, standard tool belts and toolboxes have their place for storing and transporting tools, gear, supplies, and more. But none are designed for at-heights transport or use. Properly selected and used, at heights containers inherently contribute to dropped objects prevention schemes (DROPS), fall protection, and improved workplace organization.

Toolboxes are great for organization, but most are designed to stay on the ground, in a truck or on a workbench – not to fly. Hoist buckets are designed to be lifted into the air without losing their load. With designs and materials that have been updated to meet modern safety requirements and program elements, it's fall protection for your tools and gear.

Topped tool pouches and tool holsters are designed to be stationary containers attached to worker fall protection harnesses, tool belts, or the structure being worked on. They are specifically designed for holding different tools and hardware, and keeping these things accessible while also preventing spillage of their contents. They should have D-ring tethering points for attaching tool lanyards.

The design of the hoist bucket, topped tool pouch, and tool holster must be engineered to support the intended load. The entire bucket, pouch, or holster must be load-rated and tested as a system, preferably by an independent third-party, with a high confidence safety factor (5:1) – that means a bucket rated to carry 100 pounds (45 kilograms) has been tested to 500 pounds (227 kilograms) without failure. Tethering points shall be dynamically drop tested at a 2:1 safety factor. Plain marking of the maximum weight rating on these containers helps keep them from being overloaded.

This type of intentional design and formal testing is what sets these specialized containers apart from empty traditional pouches, drywall buckets, burlap sacks, gym bags and other improvised solutions. Although each of these can go inside a rated bucket for transport!



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// TAKE COVER

When used at elevation, it's important that the contents of the bucket or tool pouch stay inside, so some type of top, cover or closure is also recommended. If the container does not have a cover or closure tethering points are necessary. The bucket or tool pouch cover should meet the following criteria:

- » The cover has to be secure when closed and fastened.
- » It has to retain the contents if the hoist bucket or pouch is accidentally tipped or inverted.
- » It has to be convenient to secure and remove, even while wearing gloves or working under challenging environmental conditions.
- » The cover itself should not create a falling object hazard when opened.
- » It should be statically tested inverted at a 2:1 safety factor, so a bucket rated to 100 pounds (45 kilograms) will be tested inverted at 200lbs (91 kilograms).

The bottom of the bucket, tool pouch, or holster is also important. It needs to stand up to the expected use and environment. While the main fabric holds stuff in, it is structurally in tension, holding up the bottom, which takes the abuse of things dropped in; being set on wet, dirty, or sharp surfaces; and even being dragged a little. These container bottoms are often reinforced with materials such as fabric, leather, or synthetic leather for durability, abrasion-resistance, and puncture-resistance.

// INSPECT TO PROTECT

Regularly inspect at-heights containers, ropes and cables, fall protection and other at-heights workplace gear for excessive wear or damage. Cuts, holes, missing stitching, and fraying should be reported to a supervisor for further evaluation. Hardware components like D-rings or carabiners should operate smoothly and be corrosion-free.

Hoist buckets, tool pouches and holsters are available in a variety of sizes, which also can make them an attractive option for tool and work organization. Work sequencing and Lean Principles can be used to place the specific tools, parts and supplies needed for a task in one container, rather than dragging the whole tool kit (kind of like what astronauts do, but with gravity).

// CONCLUSION

Defined by their simplicity, appropriate containers can take workplace organization to the next level. That improves housekeeping, inventory management, and most importantly, safety. The proper containers prevent dropped objects and give workers free hands to climb safely following updated industry regulation and best practice. It's a recipe for productivity.

// NOTES, REFERENCES AND MORE

1. Basic Ladder Safety; American Ladder Institute
<http://www.americanladderinstitute.org/?page=BasicLadderSafety>
2. Final Rule to Update General Industry Walking-Working Surfaces and Fall Protection Standards; OSHA – U.S. Department of Labor
<https://www.osha.gov/walking-working-surfaces/index.html>
3. Final Rule to Update General Industry Walking-Working Surfaces and Fall Protection Standards; OSHA – U.S. Department of Labor. §1910.23 Ladders
<https://www.gpo.gov/fdsys/pkg/FR-2016-11-18/pdf/2016-24557.pdf>

// ADDITIONAL RESOURCES

Walking-Working Surfaces and Personal Fall Protection Systems Final Rule - Frequently Asked Questions; OSHA - U.S. Department of Labor
<https://www.osha.gov/walking-working-surfaces/faq.html>

Three points of contact for ladder safety; Nationwide Insurance
<https://mysightonline.com/home/articles/safety/3-points-of-contact-to-ladder-safety>

Reducing Falls in Construction: Safe Use of Extension Ladders; OSHA -U.S. Department of Labor
<https://www.osha.gov/Publications/OSHA3660.pdf>



MAKE THE WORKPLACE A BETTERPLACE.™

THIS DOESN'T HAVE TO BE THE END OF THE ROAD, DEAR FRIEND.

Now that you've read our white paper on the importance of keeping your hands free to climb safely to at-heights work, check out our line of Squids® Tool Lanyards, Hoist Buckets and Tool Belts & Pouches. They're perfect for those moments when you need more pockets than a pair of cargo shorts.

And if you're looking to stay at the peak of your safety powers, check out www.ergodyne.com/learn/knowledge for additional white papers, product training, in-depth safety bulletins and more. After all, mastering the fine art of safety is one job that's never done.

MORE QUESTIONS?

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