



Workplace Safety

Impact Gloves Vs. Vibration-Resistant Gloves: What's the Difference?

Gillian Scott | Mar 28, 2019

What You Need To Know

Impact injuries on the job often occur on the dorsal, or back, side of the hand.

Impact-resistant work gloves use materials such as thermoplastic rubber (TPR) to disperse the force of the impact and protect a worker from injury.

Prolonged or repeated exposure to vibration can lead to hand-arm vibration syndrome (HAVS).

Vibration-resistant gloves cushion the palm, fingers and thumbs but will not completely eliminate the dangers continual vibration poses.

Our hands are vital tools for everyday life, but because we use them for so many tasks on the shop floor, they're also particularly at risk.

Hand injuries can be a major productivity issue too because hand-related accidents can keep workers sidelined at home. In 2017, according to the **National Safety Council**, hand accidents accounted for more than 13 percent of injuries that resulted in days away from work.

Impact and vibration injuries are the most common hand-related hazards. Impact wounds most often affect the muscles, skin and bones on the back of the hands, the dorsal side. Vibration injuries can arise from long-term exposure to the shaking common to machine operation.

Wearing gloves—particularly impact and vibration-resistant gloves—can help protect workers from these injuries.

The Risk of Impact to Hands

The **Bureau of Labor Statistics** notes that there were more than 121,000 hand injuries reported in 2017. Almost 18 percent of those resulted in 30 or more days away from work. Injuries ranged from cuts and bruises to broken bones and injuries that resulted in amputation.

As Dave Johnson, editor at *Industrial Safety & Hygiene News*, **writes**, "Many times, when hands are injured at work, the damage is done to the dorsal side, which is a complex network of small bones, muscles and tendons."

Tasks that involve the risk of pinching or crushing are most likely to put workers at risk for impact injuries, says Christina Beahm, senior vice president of products at **Ringers Gloves**. In manufacturing, this could include tasks such as material handling, parts making and metal fabrication.

"Many people mistakenly believe that hand impact injuries only affect a narrow range of industries, such as the offshore oil and gas sector, mining and construction," Rodney Taylor, PPE sector lead at D30, **writes in Occupational Health & Safety magazine**. "In reality, the market is much wider, with impact-related injuries also being a common danger for manufacturing, warehouse and transport workers."

"The two main problem areas are the fingertips, which are very commonly injured because they are the part that is universally in contact with everything," Dr. Lloyd Champagne, a surgeon who helped craft the standard, **told Occupational Health & Safety**, "and the big knuckles, which are frequently impacted by things such as wrenches slipping or people catching their hands under the hood of a car."

By the Numbers: A Look at Hand Injuries

20% Percentage of disabling workplace injuries that involve hands

70% Percentage of record hand injuries in 2015 involving workers not wearing gloves at the time of the accident

121,000 Number of hand injuries resulting in days away from work in 2017

1.5 million to 2 million Number of workers exposed to hand-arm vibration syndrome (HAVS)

Use of Impact Gloves Can Reduce Hand Injury Risk

Impact gloves protect against such injuries, Beahm says. The glove material isn't rigid; it's not an armor. Instead, she says, the gloves' protective features absorb and disperse an impact while still allowing workers to maintain dexterity.

"Impact-resistant work gloves have unique protective features such as thermoplastic rubber (TPR) or thermoplastic elastomers (TPE) and proprietary foams that shield the top of your hand from unexpected impact, smashes, crashes and abrasion injuries," Johnson explains.

Under the new standard, gloves are rated on a scale from 1 to 3, with Level 1 gloves offering the least protection and Level 3 gloves the most. Protection is measured at three different points: fingertips, knuckles and thumbs.

"If your rating of the impact on the fingertip was a 1 and the rating on the knuckle was a 3 and the rating on the thumb was a 2, then you're going to get a 1 overall," Ringers' Beahm says. "You're going to get the lowest-rated rating tied to the test. And that really is meant to make sure that the manufacturers are paying attention to how they design and utilize TPR within the glove."

The new standard has already led Ringers to make some tweaks to the design of its impact gloves, she says. “The standard made us better understand our design elements within our gloves.”

Beyond driving improvements in design, the standard also lets companies evaluate and compare the impact protection offered by different glove models, Johnson says, making sure workers get the protection they need for their specific job.

“Many people mistakenly believe that hand impact injuries only affect a narrow range of industries, such as the offshore oil and gas sector, mining and construction. In reality, the market is much wider, with impact-related injuries also being a common danger for manufacturing, warehouse and transport workers.”

Rodney Taylor
PPE Sector Lead, D30

What is Hand-Arm Vibration Syndrome?

Exposure to hand and arm vibration in the workplace can range from minor to severe—and the effects from nuisance to debilitating.

Greg Schrab, Ergodyne senior vice president of operations and product management, *writing for ISHN*, details the dangers of hand-arm vibration syndrome (HAVS).

“While HAVS can disproportionately have an effect on workers operating heavy machinery, such as jackhammers, even less jarring tools such as handsaws, power drills and, yes, lawnmowers, can still contribute to more modest incidents of HAVS,” Schrab says.

What Are the Symptoms of HAVS?

Short-term symptoms of HAVS include numbness and tingling, but long-term injuries can include loss of grip strength, decreased dexterity, chronic pain and a higher risk of developing arthritis, tendonitis or carpal tunnel syndrome. In extreme cases, workers can suffer tissue damage, gangrene and digit loss.

When compared to workers not exposed to hand-arm vibration, those workers whose jobs involve prolonged exposure have four to five times the likelihood of developing vascular and neurological diseases, reports 2017 research published in the PLOS One journal and shared by the *U.S. National Library of Medicine*.

Vibration-Resistant Gloves Help Reduce Incidence of HAVS

The design of vibration-resistant gloves reduces the impact of vibration exposure by cushioning the palm, thumb and fingers.

The standard for vibration gloves, *ANSI/ASA S2.73-2014/ISO 10819:2013*, Mechanical Vibration and Shock, specifies the “laboratory measurement, data analysis and reporting of the vibration transmissibility of a glove with a vibration-reducing material.”

Though vibration-resistant gloves can reduce the impact of vibrations, the use of gloves alone is often

not enough to prevent injuries.

Schrab describes personal protective equipment such as vibration-resistant gloves as a “last line of defense.” In addition, shops should:

- Use low- or anti-vibration tools.
- Keep tools well-maintained.
- Train workers to hold tools loosely and change hand positions often.
- Encourage regular 10-minute breaks and working in short bursts rather than long periods of continuous use.
- Rotate workers on task to reduce individual exposure to hand-arm vibration.
- Make sure workers keep hands warm and keep cold exhaust from tools away from hands.

Are you using the ANSI/ISEA standards to choose impact and vibration-resistant gloves for your workers? How has their use affected productivity? Share below.

www.mscdirect.com/betterMRO

Copyright ©2025 MSC Industrial Supply Co.