

STOP THE VIBRATION, PREVENT THE PAIN

ANTI-VIBRATION GLOVES PROTECT AGAINST HAND-ARM VIBRATION SYNDROME

By Joseph D. McGarry

If workers work even an hour a day with power tools, they are at an increased risk for HAVS (Hand-Arm Vibration Syndrome). HAVS is caused by excessive exposure to vibration from construction equipment, such as power tools. This degenerative disease begins with tingling and numbness at the tips of the fingers, and can progress to total loss of finger and hand use. Another serious problem with this disease is that it often has a latent period and may never appear until years after exposure, long after the damage is done. Because of this, nearly a million workers are at risk for this degenerative and debilitating disease.

In today's safety environment, there are three ways to prevent and reduce the number of HAVS cases. This is done through job rotation, manufactured vibration controls on tools, and wearing personal protective equipment (PPE). Since each individual responds differently to vibration, the easiest way to protect workers is by selecting a proper anti-vibration glove.

ANTI-VIBRATION GLOVE BASICS

Gloves must meet the American National Standards Institute (ANSI) standard (ANSI S3.40-2002:ISO10819.1996)—which requires gloves to keep hands warm and dry, reduce vibration by 30 percent, and protect the full hand—to be truly considered anti-vibration gloves. This means it must be a full-fingered glove. There are several glove manufacturers that market anti-vibration gloves, but not many that meet this strict standard.

Keeping hands dry and warm is essentially the goal of most gloves and is important for vibration protection as well, because extremely cold temperatures can increase the likelihood of experiencing this disease. This is also why a full-fingered glove is important. Since the disease typically starts with tingling in the fingers, a full-fingered glove helps protect against environmental stimuli, such as coldness and dampness.

The glove must also damp vibration. Many manufacturers offer gloves with a polymer-based padding to absorb the vibration. Please keep in mind that it's the polymer that damps this



vibration, not necessarily the thickness of the glove. Therefore, a padded glove made of cotton or other padded material may not damp any vibration and could possibly increase the transfer of vibration because of increased grip strength. It is recommended that the polymer that is used be of uniform thickness throughout the glove to ensure proper absorption and diffusion of vibration.

SELECTING AN ANTI-VIBRATION GLOVE

Not all power-tool users need a full-fledged ANSI-certified, anti-vibration glove. The level of glove needs to match the maximum level of exposure to vibration and impact. The highest level or hazard level of exposure requires an ANSI-certified, anti-vibration

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glove for the best protection. The hazard level is generated by the vibration value (the tool manufacturer can provide this) times the length of time in usage. Extreme vibration for even less than an hour is considered hazardous. For a vibration value chart, go to www.lni.wa.gov/wisha/ergo/evaltools/hazardzonechecklist.pdf or check with the tool manufacturer.

The next level is the caution level, at which workers should select a glove that provides increased gripping, since intensity of grip strength can increase the chances of HAVS; adequate warmth and protection against moisture; and, potentially, some vibration-diffusion material, such as a padded polymer insert.

The final and safest level is considered the OK level. Even within this OK level, individuals may be at risk if exposure is for long periods of time. Therefore, a protective glove of any kind would add a level of protection, which could make an important difference.

BASIC GLOVE SELECTION TIPS

When looking for an anti-vibration glove or any glove in general, here are some basic selection tips to follow:

- **Always select a glove based on the key feature needed for the task.**

Gloves try to be everything to all workers. However, there just isn't that one glove that does it all for all jobs.

- **Select different gloves for different functions, especially when the task could cause significant damage.**

For example, select a glove that is chemical resistant if working with dangerous chemicals. If working with power tools, select a glove based on the necessary vibration protection needed. Just like a tool box has different tools for different jobs, workers may have multiple gloves based on the tasks they may be performing.

ENERGIZE THAT GRIP

Clearly, gloves are not just a one-size-fits-all fix for hand protection. It takes a deeper understanding of the application that the worker is doing when the glove is worn to even begin to select the right glove. With gloves, ergonomics and fit are big issues. If the glove is not sized correctly, workers might overcompensate by gripping harder, which could lead to other hand problems and injuries beyond the ones that the glove is being worn for in the first place. So many times, gloves are removed because the fit is not right,

making the risk of injury imminent, even when safety directors and managers are trying to provide the right safety gear. Gloves come in sizes for a reason and should be fit properly for maximum protection and performance.

It is also important to find a very knowledgeable PPE supplier. Every supply store carries gloves, but not everyone is a glove expert. If the gloves must address a

specific protection need, make sure to get the best information and advice available. All gloves are not made equally, and neither are glove suppliers.

In the past decade, gloves have become more sophisticated, with numerous choices of material, fibers, coatings or inserts, sizes, colors, textures, and more. Each provides benefits that may or may not offer the user what is necessary for the task at hand. ♦

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