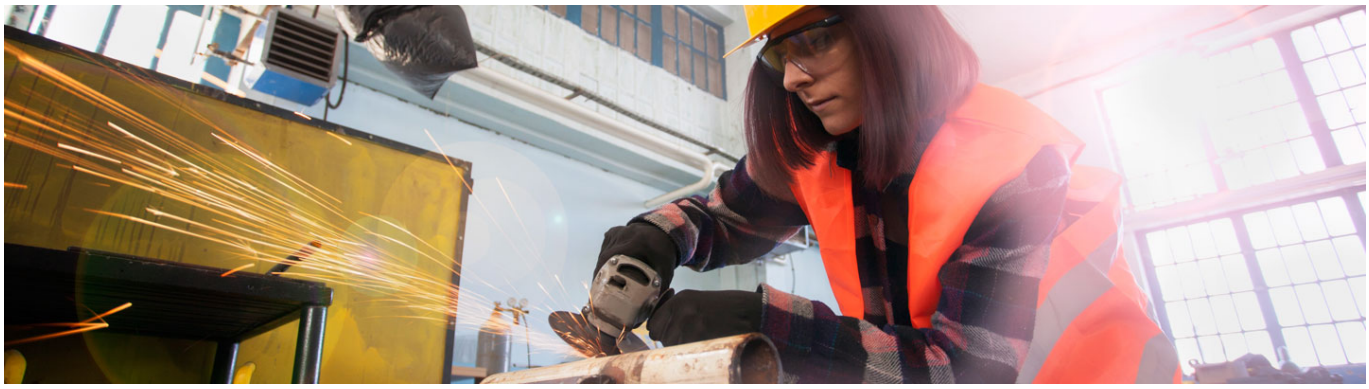

Workplace Safety

Hand Safety: How to Find the Right Cut-Resistant Gloves

Gillian Scott | Jun 28, 2018

What You Need to Know

More than 1 million workers end up in emergency rooms every year with injuries to their hands. Some of the lacerations, punctures and other injuries might have been avoided with the right personal protective equipment—cut-resistant gloves.
After updates in 2016, there are now two sets of ANSI scores used to rate a glove's cut resistance. The newer scores allow more detail in reporting.
Engineered yarns, which combine a variety of materials to offer more protection and higher performance, are now the gold standard in hand PPE.
In addition to cut protection, engineered yarns help manufacturers create gloves with additional properties–like fingertip sensitivity for touch-screen use, and gloves that keep hands warm, cool or dry, depending on needs.

Our hands are among our most important tools, at work or at home. Yet they're also among the most at-risk body parts. The right gloves can help, but do you understand all the factors—such as the right standards for your industry or the importance of fit and comfort to workers?

More than a million workplace hand injuries occur each year, including lacerations and punctures. In a June 20 webinar offered by MSC, Kathleen Rouse, director of research and development at Worldwide Protective Products, and John Mazur, Worldwide's regional sales manager, discussed cut-resistant glove features and standards.

According to the U.S. Bureau of Labor Statistics, of the more than 1 million workers that head to the emergency room each year with hand injuries, more than 70 percent weren't wearing gloves, and 30 percent were wearing damaged, inadequate or the wrong type of glove.

Besides the cost of medical claims and workers' compensation claims, hand injuries can also lead to a significant amount of lost work time, Mazur says.

What Are Your Needs?

With so many features and materials available, it could be tough to decide what type of gloves to buy for your facility. MSC has created an ***interactive product selector*** that helps you identify your application needs and determine workers' needs.

The selector covers cut resistance levels for different tasks, additional protective factors (such as resistance to heat, cold or flames), other safety considerations (such as extra protection for fingers), and wearability factors (such as flexibility and stretch).

Understanding ANSI Cut-Level Standards by Hazard Level, Task and Cut Rating

The information below has recommended cut resistance levels based on ANSI cut-level standards

ANSI Cut Resistance Levels

Cut Hazard Level:

Low

Tasks: Material handling, shipping and receiving, some assembly work

Glove Cut Rating:

ANSI A1/ANSI 1

Cut Hazard Level:

Light to Medium

Tasks: Material handling, assembly, maintenance work, automotive, handling very small parts with sharp edges, some construction

Glove Cut Rating:

ANSI A2-A3/ANSI 2-3

Cut Hazard Level:

Medium to High

Tasks: Construction, automotive, appliance manufacturing, glass handling, machine handling, metal stamping, paper production

Glove Cut Rating:

ANSI A4-A6/ANSI 4

Cut Hazard Level:

Heavy

Tasks: Assembly or movement of large, bulky, or heavy objects with sharp edges, assembly or movement of items that are hard to grip

Glove Cut Rating:

ANSI A7-A9/ANSI 5

Rouse says the changes in rating levels were driven by product innovation, with new yarn technologies changing the levels of ***cut protection offered by gloves***. The new scores allow manufacturers and users to zero in on gloves that offer higher performance.

"Today, engineered yarns are the gold standard because of their ability to deliver higher cut-resistant levels," says Rouse. "By engineered yarns we mean a combination of materials put together to provide more protection than any single material alone."

Rouse says four material characteristics affect a glove's cut resistance:

1. Strength: A glove can be made stronger through the use of materials like Kevlar.
2. Hardness: Materials like stainless steel add to a glove's hardness.
3. Lubricity: Some materials can increase a glove's slipperiness, making a cutting edge slide over the surface of the glove instead of cutting it.
4. Rolling action: "A sharp edge slides over the top of the yarn as if rolling across a ball bearing without cutting through the material," Rouse says. "This also explains why knitted gloves usually do well in CR applications–the yarn loops have room to move and roll when contacted by a sharp surface."

Gloves can be designed for one or more of the factors, depending on the anticipated use and level of cut protection needed, but no single fiber can offer every benefit.

"Glove manufacturers engineer composite yarns, made with two, three and even more individual components to deliver the benefits of strength, hardness, lubricity and rolling action," Rouse says. "In that way, we can deliver gloves with two or even three times more cut resistance than a product made only with one component."

Safety Gloves for Flame Resistance, Temperature, Wearability and Visibility

Besides ***cut resistance***, gloves created with a mix of fabrics can also meet a variety of other needs, Mazur says.

"By strategically blending high-functioning fibers (like steel and fiberglass) and other traditional fibers (like cotton, polyester and spandex) we can deliver additional benefits for the glove, like abrasion, ***cold*** and ***heat resistance***, and even ***flame resistance***," Mazur says. "In the same design, we can improve things like fit and dexterity and things like coolness and moisture-wicking to the skin."

Depending on the planned use, gloves may be designed with protective features such as resistance to cold, heat, flame or chemicals, impact protection, or extra protection for fingers, thumb crotch, wrists or forearms.

"High visibility is becoming more and more popular in the industry right now," Mazur says. He says a plant where workers had to change rollers on a machine had a problem with fingers getting pinched. "The reason was one worker couldn't see the other workers' hands. So they asked us to develop a high-visibility glove. Now both workers can see the others' hands when placing the rollers."

Wearability factors–things that make a glove more comfortable–include flexibility and stretch, manual dexterity, fingertip sensitivity, breathability and more.

"If it's not comfortable, compliance is going to be very low," Mazur says.

If your supplier can't find a glove that fits your needs, you don't need to settle for something that doesn't work well for your task. Mazur says manufacturers can now design gloves to meet specific needs.

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> Kathleen Rouse
> Director of Research and Development, Worldwide Protective Products

ASTM vs ANSI: Understanding Cut Resistant Glove Standards

According to Rouse, two organizations set the standards for cut-resistant gloves: ASTM International sets the standard for cut testing, while the American National Standards Institute sets the standard for reporting cut levels.

"I often think of ASTM as telling us how to do the cut testing and ANSI telling us what to do with the results," says Rouse.

ANSI updated its ratings in 2016, so there are now two sets of scores. ANSI scores of 1 through 5, with 5 being the most cut-resistant, mean the product was tested by the standard in effect before 2016, says Rouse. ANSI scores of A1 through A9 mean the product was tested based on the new scoring levels.

"The biggest difference in the two scoring methods is that the new one is more detail," she says. Products formerly covered by ANSI level 4 are now rated by levels A4 through A6, and products formerly covered by level 5 are now rated A7 through A9.

What are your cut-resistant glove needs? Tell us what types of tasks your facility uses cut-resistant gloves.