



Safety

## PIP Uses Tech Advances to Make Cut-Resistant Safety Gloves Thinner—And More Comfortable

James Langford | Jan 04, 2024

It sounds like a paradox: designing a safety glove that's thinner than older models but provides the same protection from cuts.

PIP achieved the two seemingly conflicting goals, however, with its portfolio of 21-gauge gloves. The safety gear relies on new technology that allows manufacturers to produce gloves with 21 stitches per square inch, the highest gauge level on the market today.

Work glove thicknesses, or gauges, previously ranged from thick 7-gauge construction to 10-gauge, 13-gauge, 15-gauge and 18-gauge, which dominated the market for lighter-weight gloves in recent years, says Jeffrey Cohen, director of product management at PIP.

Increasing the number of stitches per square inch decreases the thickness of yarn or fibers required, resulting in a thinner glove that allows wearers more flexibility, breathability and tactile sensitivity.

Both are crucial for manufacturing workers and machinists shaping sometimes intricate workpieces with increasingly costly metal alloys. When they can't feel their workpieces through thick safety gloves, they may take them off, increasing the risk of injury from sharp tools and equipment.

"When you're doing certain jobs that require cut protection, you also really need to feel what's going on," Cohen explains. "If you're dealing with small, little sharp parts, you're worried about being able to pick up particular items or adjust little tools, which requires good tactile sensitivity, but you're also worried about getting cut by slivers of metal or, perhaps, slitting burrs on coils of steel. It's all about giving the customer a better cut protection with great grip, peak dexterity and tactile sensitivity."

**"The thinner the material and the higher the cut rating, the better the performance will be for the employee."**

Nora Kirby  
PIP

Boosting dexterity for users also reduces muscle fatigue, which can lead to injuries or potentially costly

mistakes on workpieces, adds Nora Kirby, national account manager for PIP.

“The thinner the material and the higher the cut rating, the better the performance will be for the employee,” she adds.

## Hand Protection Regulations

Many occupational hand injuries happen because workers find gloves bulky, hot or uncomfortable and simply take them off during their shift. With thinner 21-gauge construction, that’s less likely, says PIP’s Ben Julian.

It’s a result that has the potential to benefit employers by reducing the risk of costly regulatory fines, since the U.S. Occupational Safety and Health Administration requires businesses to provide appropriate **hand protection** to workers exposed to hazards from toxic chemicals to cuts, burns and harmful temperatures.

The agency imposed **\$506,155** in penalties for violations of its rule in the 12 months through September 2023, with manufacturers accounting for 65 percent of the total.

Manufacturers and metalworkers are among the likely buyers of PIP’s new gloves, as are construction workers, the company says. The **G-Tek® PolyKor®** line is suited to dry or slightly oily conditions, thanks to its polyurethane and nitrile coating options.



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Scaling up to a 21-gauge glove from a lower-gauge model “gives you a lot more stitches per square inch,” Cohen says, with the tighter knit producing a much stronger material that can better resist cuts

without reducing comfort.

PIP's 21-gauge gloves are available with cut protection ratings of A4 and A5, the company says. The designations refer to a scale of A1 to A9 set by the ***American National Standards Institute, or ANSI***.

Gloves with an A4 rating can resist cuts from weights of 2,200 grams or less, while those with an A5 rating can withstand up to 2,999 grams.

Some of PIP's 21-gauge gloves also include reinforcement in the crook between the forefinger and thumb, a common stress point in gloves, and a coating that enables use of touchscreen devices.

"It seems everybody today works with a touchscreen, whether they're operating machinery or adding parts to a job, and if a glove doesn't give you the ability to use the touchscreen with it on, you have to take it off," Kirby says. "That's a big opportunity for an injury while people's hands are exposed or if they don't put the glove back on."

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PIP's 21-gauge gloves have caught on rapidly, the company says, reflecting customer focus on the performance of personal protective equipment, or PPE.

"Fit and function are really the things that people want," Kirby says. "They want to know it fits well and that it functions properly, but they're also concerned about the price. If we can provide a great product at a really good price that performs incredibly well for their employees, then that makes the buyers who choose these products happy."

**What qualities do you consider most important when choosing safety gloves for your workforce? Tell us in the comments below.**

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