PPE

‘Second Skin’: Ansell’s State-of-the-Art Gloves Restore Power of Touch for EV Workers

James Langford | May 18, 2023

The electric vehicle revolution isn’t transforming just the types of cars on American highways and the parts used to build them.

It’s also driving modernization of personal protective equipment like gloves, not only for the automotive industry but an array of other professions.

While builders of internal combustion-powered vehicles needed nitrile gloves to protect their hands from potentially caustic fluids, technicians assembling and repairing electric vehicles rely on rubber insulating gloves and leather covers to avoid potentially debilitating shocks.

The catch is that they need to be able to use their fingers to position tiny parts and manipulate sensitive connections while wearing them—tasks the bulky safety gloves that have long dominated the market wouldn’t allow.

Ansell, the Iselin, N.J.-based safety solutions provider, came up with a game-changing solution that not only meets the EV industry’s needs but can enhance dexterity and potentially boost productivity for workers in fields from construction to utilities, construction and aerospace: the ActivArmr ultra-lightweight rubber insulated glove.

Introduced in January, the glove is 30% thinner than the PPE-maker’s legacy model and designed to fit like a second skin for wearers handling minuscule components.

It’s recommended for all users of Class 00 gloves, which are rated by the standards-setting organization ASTM to provide protection from charges of up to 500 volts of alternating current and 750 volts of direct current.

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“They can wear them while working on equipment, handling tweezers and small parts, and they don’t need to remove them to handle a pen or pencil or type on a keyboard, which might expose them to electrocution by the energized equipment around them,” says Janine Duda, regional portfolio product manager for Ansell.

While Ansell’s new rubber insulating gloves were designed with electric vehicle-makers in mind, they’re

also tailor-made for industries from automotive repair and service to aerospace, construction and utilities, the company says.

The gloves, which are silicone free, are resistant to acid and extreme cold.

ActivArmr ultra-lightweight rubber insulated glove | Image courtesy of Ansell

To develop the next-generation product, Duda worked with two leaders in U.S. electric vehicle manufacturing on identifying needs and formulating possible solutions.

Pivoting to meet the needs of electric vehicle producers is crucial for automotive suppliers of all stripes amid a seismic change in the habits and expectations of drivers and the auto industry itself.

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In the U.S. alone, electric vehicle sales have climbed more than 40 percent a year since 2016, according to the ***consulting firm McKinsey***.

And the pace of change is likely to accelerate further: Both Europe and the U.S. have set regulations including tighter environmental standards for fossil fuel usage that they hope will help electric vehicles capture 50 percent of the market by 2030.

'Like a Second Skin'

"We're the first to the market with anything like this, which is exciting," says Duda, who has 14 years of experience with personal protective equipment, 11 of them with electrical safety gear. "It took years to develop, but no one else has been able to do it. It's been tried before by our competitors."

In addition to meeting worker requirements for tactility and dexterity, the gear had to comply with standards including ***ASTM D120***, referenced in the U.S. Occupational Safety and Health Administration's ***regulation on electrical PPE***, and ***EN 60903***, the guideline set by the European Committee for Electrotechnical Standardization in Europe.

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Among the first steps for Ansell was developing new formers, or hand molds, for the gloves, with slimmer wrists and arms and longer, narrower fingers.

While the new gloves must still be worn with leather protectors, which safeguard the rubber from cuts, tears and punctures, their slimmer profile means the protectors can be closer to the user's hand size, Duda says.

When product testing began, the ultra-lightweight gloves were given to only a handful of employees, and their co-workers quickly began requesting them as well, Duda recalls.

Hand Safety Regulation

The ultra-lightweight gloves have been "a big hit," she says. Workers "are absolutely loving them. They hated working with those big, thick gloves."

In a company survey, wearers described the ultra-lightweight glove as a "game changer" that delivers "massive improvement" over existing alternatives. "It's amazing to have extra dexterity when working with high voltage," one user said.

Manufacturing employees wearing the ActivArmr ultra-lightweight "aren't struggling with the glove to keep it on their fingers," which means it also reduces fatigue, Duda notes.

The increased comfort and dexterity means they're less likely to try doing their jobs without them, a behavior that safety professionals say is common with uncomfortable PPE and can make workplace injuries both more common and more severe.

"Our goal is to keep hands protected and safe, which has a lot to do with end users wearing the gloves," says Christina Beahm, senior director for marketing and product energy at Ansell.

When workers used bulky, uncomfortable styles that they had to remove to write notes or make computer entries, they often failed to put them back on, she notes.

"Driving compliance is a huge goal at Ansell with regard to hand safety," she explains. "Comfort, fit and fit-for-function are key for us."