



Does one size fit all when it comes to PPE?

By: Wesley Wheeler
Director of Safety | NECA

There are many contractors and owners in the industry who think that Personal Protective Equipment (PPE) is as easy as one-size-fits-all or that one set of PPE covers all scenarios. These are the same individuals that use PPE as the primary protection method — which should never be the case.

A good safety program will address each situation independently and separately to provide the best protection possible. OSHA states that PPE is a last resort, and the Hierarchy of Controls puts eliminating the hazard as the primary means of protecting workers. PPE is needed when there are no other alternatives to protect the worker. Therefore when it is determined PPE is needed, we need to address what is the proper PPE to wear and, if PPE is worn every day, what level of PPE offers the best protection.

Once it is determined that PPE is required, choosing the PPE that is best for the situation seems like a daunting task. Working around electrical equipment ranging from 100-amp residential panels to 4,000- amp commercial and industrial switchgear offers a wide range of available fault current that could lead to injury in the event of an arc flash or electric shock. Many electrical tasks such as voltage and amperage testing require dexterity when using the hands, so wearing a glove that is big can lead to accidents and frustration.



Too often, electricians will take off their bulky gloves and work with no protection, increasing their chance of injury.

The same goes for the false sense of security created when the electrician, thinking that he or she really doesn't need a glove, uses a glove that is underrated just to be seen wearing PPE. This creates overconfidence that often puts the electrician too close to exposed energized components and leads to electrical arc and shock events that could be fatal.

Wearing garments that are either underrated or too bulky can also put electricians in harm's way. Wearing minimum PPE Category 2 apparel when the incident energies can exceed 20 or 30 calories per centimeter squared (cal/cm^2) could cause severe third-degree burns that may lead to infection and death — if the electrician survives the initial explosion. At the other extreme, using a PPE Category 4 suit and hood when a PPE Category 2 is recommended could make movement and visibility difficult for the electrician, possibly leading to an explosion, arc flash or electrical shock.

Some companies only want to buy XL gear, but electricians come in many sizes and shapes. If the sleeves are too long, the electrician will roll up the sleeves and may expose his or her wrist and hands to injury, since the sleeve is not buttoned and tight-fitting on the arm. Electricians that need a larger size than provided so they can close the garment securely risk injury in an arc flash event since most electricians are facing the source of the arc.

It is clear that the one-size-fits-all mentality is not appropriate when selecting PPE, especially PPE that is designed to protect workers from electric shock and arc flash. When it is required to wear this type of PPE, choosing garments that are the right size and offer the correct level of protection provides optimum safety. Choosing rubber gloves and PPE based on the proper size and voltage ratings can prevent accidents by permitting the electrician the proper dexterity needed to perform electrical tasks.

*This article was originally featured in Flame Resistant Insights, Volume 05, June 2015,
Web: <http://www.westex.com/ezine/june-2015/>*