

An arc flash is a high-voltage electric short circuit that leaves its intended path and travels through the air from one conductor to another (or to the ground). The electrical explosion caused by the event can reach temperatures as high as 10,000 degrees Fahrenheit. It can also register sound levels as high as 140 to 160 decibels or roughly the equivalent of standing 100 feet from a jet taking off.

In mere seconds, an arc flash can wreak havoc and change lives forever. If they do not prove fatal, arc flash injuries can result in severe burns, loss of hearing and/or sight, and concussions, as well as other medical problems.

What causes arc flash incidents and how to avoid them?

Maintenance

Lack of maintenance is a major reason why arc flash incidents occur. Dust or other materials can build up and create a path for electricity to travel.

Corrosion of electrical equipment is another contributor to a potential arc flash.

Equipment such as pull boxes, junction boxes and fittings must have covers. Each outlet must have a cover, faceplate, or fixture canopy in completed installations. When you remove a circuit breaker there will be a hole, you need to fill it with a blank.

Poorly designed or cheap equipment that just barely meets the (National Electrical Code) standard is another cause of arc flash.

De-energize

Allowing work on energized equipment is another cause of arc flash. Equipment must be de-energized, locked out and tagged out, then verified.

Wearing proper PPE

The final layer is personal protective equipment, and the key term is “arc-rated” clothing. Table H.2 in the 70E standard provides a simplified system for arc rated clothing. Employers must ensure all workers who are exposed to electrical-arc or fire hazards not wear clothing that could melt onto their skin or ignite. Most people are not fatally injured as a direct result of an arc-flash incident, but rather from burns resulting from flammable clothing or electric shock.

Staying Vigilant

Provide training and establish procedures to prevent arc flash incidents. Part of the training should focus on the use of insulated tools.

Another key piece of proper procedures is ensuring only qualified employees perform electrical work. A “qualified person” is someone who has “demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify the hazards and reduce the associated risk.

When working around electricity, always focus and do not work distracted.

LET'S BE SAFE OUT THERE!