

Arc Flash Protection

An arc flash is the light and heat produced from an electric arc supplied with sufficient electrical energy to cause substantial damage, harm, fire, or injury. Electrical arcs experience negative resistance, which causes the electrical resistance to decrease as the arc temperature increases. Therefore, as the arc develops and gets hotter the resistance drops, drawing more and more current (runaway) until some part of the system melts, trips, or evaporates, providing enough distance to break the circuit and extinguish the arc.



Proper PPE (Personal Protective Equipment)

With recent increased awareness of the dangers of arc flash, there have been many companies that offer arc flash personal protective equipment (PPE). The materials are tested for their arc rating. The arc rating is the maximum incident energy resistance demonstrated by a material prior to break open (a hole in the material) or necessary to pass through and cause with 50% probability of a second or third degree burn.



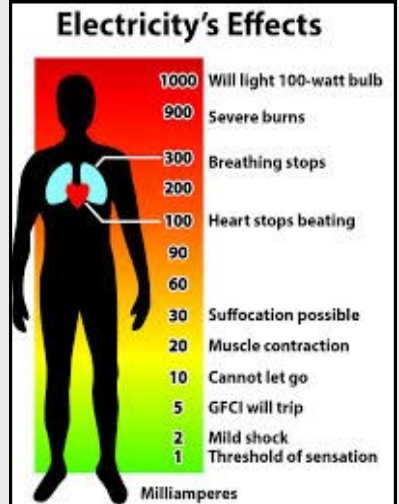
Arc Flash Jackets and Overalls

are key factors in proper arc flash protection. Flame resistant apparel can increase the chances of survival against electrical arc flash accidents. With flame resistant properties that will not wash or wear off, these items are crucial for working around electricity. Arc flash jackets and coveralls are designed not to melt. The fabric will become thicker and swell when being exposed to a heat source to form a barrier between the heat and the skin.



Arc flash Hoods

These face shields are used for protection against an arc flash. The requirements for arc flash protection are provided by National Fire Protection Association (NFPA) in the NFPA's 70E standard. Face shields are included in this standard and must provide protection based on Arc Thermal Performance Value (ATPV) which is measured in calories per square centimeter (cal/cm²). The calorie rating must be determined first to be able to select the shield that will provide the best protection. In determining the level of protection needed for your job or task, some methods available to you are; referring to the NFPA 70E-2012 Article 130 tables 130.4 (C)(a) or (b), 130.7 (C)(15)(a) and 130.7 (C)(16) or Annex D



Rubber Insulating Gloves are among the most important articles of personal protection for electrical workers. To be effective, electrical safety gloves must incorporate high dielectric and physical strength, along with flexibility and durability. To ensure safety and performance, they should meet and/or exceed the requirements of current American Society for Testing and Materials (ASTM) D120 specifications. Gloves should also be electrically tested following ASTM D120/IEC903 specification.

Insulated Electrician's Tool Kit are individually tested and certified by the manufacturer for specific working conditions. Generally, the maximum rated voltage for insulated tools is 1000 volts AC and 1500 volts DC. When buying insulated hand tools, look for compliance with the International Electro technical Commission (IEC), the American Society for Testing and Materials (ASTM). The ASTM and IEC do not test the tools for compliance. Manufacturers do their own testing, but these organizations set the performance requirements for the insulation.



Information sources include Honeywell, Grainger, OSHA

If you are still having difficulty choosing Arc Flashing PPE please contact us at askzoro@zorotools.com or 855-289-9676

Product Compliance and Suitability.

THE PRODUCT STATEMENTS CONTAINED IN THIS TECH TIP ARE INTENDED FOR GENERAL INFORMATIONAL PURPOSES ONLY. SUCH PRODUCT STATEMENTS DO NOT CONSTITUTE A PRODUCT RECOMMENDATION OR REPRESENTATION AS TO THE APPROPRIATENESS, ACCURACY, COMPLETENESS, CORRECTNESS OR CURRENTNESS OF THE INFORMATION PROVIDED. INFORMATION PROVIDED IN THIS TECH TIP DOES NOT REPLACE THE USE BY YOU OF ANY MANUFACTURER INSTRUCTIONS, TECHNICAL PRODUCT MANUAL OR OTHER PROFESSIONAL RESOURCE OR ADVISER AVAILABLE TO YOU. ALWAYS READ, UNDERSTAND, AND FOLLOW ALL MANUFACTURER INSTRUCTIONS.

Document Create Date: 7 September 2013

Last Review: 14 October 2014

Zoro Arc Flash © 2011 - 2014 Zoro Tools, Inc. All rights reserved.