

ARC FLASH 101:

According to the dictionary, an electric arc (an arc flash is a type of electric arc) is a "luminous discharge of electricity across a gap in a circuit or between electrodes". You may not know it, but you're probably already familiar with an electric arc – one happens every time you turn on a light bulb.

WHAT'S AN ARC FLASH?

An arc flash is an electric arc only on a larger scale. It is an instant explosion of electrical energy that creates light, noise, shockwaves, and heat; all at levels that produce serious damage. The energy emitted from an arc flash can not only destroy property and hurt people in the vicinity, but it can also be deadly.

WHAT CAUSES AN ARC FLASH?

An arc flash occurs when an electric current leaves its intended path and travels through the air towards a new conductor or the ground. This path transfer happens when there is an arching electrical arc, and can be caused by a multitude of factors from dust particles in the air to accidental contact with a live electrical circuit.

HOW CAN I PROTECT MYSELF?



Protection from arc flash hazards is covered under the NFPA 70E standard. An arc flash hazard is quantified by measuring the level of incident energy, which is the energy transferred to a surface at a specified distance (typically 24 inches for low voltage equipment) from the area in which the arc flash will originate. This energy is measured using cal/cm2.

An energy value of 1.2 cal/cm2 would be enough to cause 2nd degree burns while 8 cal/cm2 would cause 3rd degree burns.

Ensuring all machinery at risk for an arc flash is deenergized using the lockout/tagout method is the best prevention against injuries from arc flashes; however, accidents happen and humans are infallible, so it is always prudent to wear the proper personal protective equipment (PPE) when working around equipment.

HOW DOES PPE PROTECT ME?



An Incident Enerygy Analysis will identify the area that forms the Arc Flash Protection Boundary, which is the distance from a potential arc flash in which PPE must be worn.

When it comes to arc flash protection, the purpose of PPE is not to provide full protection from an arc flash but to limit the amount of damage to 2nd degree burns or less. Considering that the heat emanating from an arc flash can reach 35,000 °F (19,430 °C) – hotter than the surface of the sun – walking away with only 2nd degree burns is a good outcome.

NFPA 70E outlines the risk categories for arc flashes on a scale of 1 to 4 and outlines the PPE required per risk category as follows:

HAZARD RISK CATEGORY	REQUIRED CLOTHING / PPE	CAL / CM ²
1	FR (flame resistant) shirt and FR pants or FR coverall, arcrated gloves	4
2	Cotton underwear – conventional short sleeve and briefs/ shorts, plus FR shirt and FR pants, arc-rated gloves	8
3	Cotton underwear plus FR shirt and FR pants plus FR coverall, or cotton underwear plus two FR coveralls, arcrated gloves	25
4	Cotton underwear plus FR shirt and FR pants plus multilayer flash suit, arc-rated gloves	40

Refer to 130.7(C)15(a): if the estimated data places your hazard risk outside the above catagories, a full incident energy analysis will need to be preformed to provide the exact CAL rating required.





365DLX2 | S - 2XL

- Heavyweight 3-1/2 oz grain horsehide leather
- Excellent water, oil, and stain-repellent properties
- Performance thumb/palm patch, 2" gauntlet cuff with Retro-reflective silver strips
- Sewn with DuPont™ Kevlar® fiber thread for extra seam strength

Also available in a 6" cuff version (#365DLX6)









#365DLXFTL | M - 2XL

- Heavyweight 3-1/2 oz grain horsehide leather
- Excellent water, oil, and stain-repellent properties
- Performance thumb/palm patch, 6" gauntlet cuff with Retro-reflective silver strips
- Sewn with DuPont™ Kevlar® fiber thread for extra seam strenath
- Thinsulate[™]-lined for winter protection

Also available in a 2" cuff version (#365DLX2TL)









#365DLXDTL | M - XL

- Heavyweight 3-1/2 oz grain horsehide leather
- Excellent water, oil, and stain-repellent properties
- Performance thumb/palm patch, 6" gauntlet cuff with Retro-reflective silver strips
- Sewn with DuPont™ Kevlar® fiber thread for extra seam
- 200 gram thinsulate[™]-lined for exceptional winter protection

Also available in a 2" cuff version (#365DLX2DT)











#365DLX2KG | S - XL

- Heavyweight 3-1/2 oz grain cowgrain leather
- Excellent water, oil, and stain-repellent properties
- DuPont[™] Kevlar[®] fiber lining provides 360° cut protection, sewn with DuPont™ Kevlar® fiber thread for extra seam strength
- Performance thumb/palm patch, 2" gauntlet cuff with Retro-reflective silver strips

Also available in a 6" cuff (#365DLX6KG)









#365DLXTKG | S - XL

- Heavyweight 3-1/2 oz cowgrain leather
- Excellent water, oil, and stain-repellent properties
- DuPont™ Kevlar® fiber lining provides 360° cut protection, sewn with DuPont™ Kevlar® fiber thread for extra seam strength
- Performance thumb/palm patch, 2" gauntlet cuff with Retro-reflective silver strips
- Thinsulate[™]-lined for winter protection

Also available in a 2" cuff (#365DLX2TKG)











361DLXFTL | M - XL

- Heavyweight 3 ½ oz. grain horsehide leather for a tough, yet comfortable, mitt
- Excellent water, oil, and stain-repellent properties
- Performance thumb/palm patch, 6" gauntlet cuff with Retro-reflective silver strips
- Sewn with DuPont™ Kevlar® fiber thread for extra seam strength
- Thinsulate™-lined for winter protection

Also available in a non-winter 6" gauntlet cuff (#361DLX6).









#361DLXWL | M - XL

- Heavyweight 3 ½ oz. grain horsehide leather for a tough, yet comfortable, mitt
- Excellent water, oil, and stain-repellent properties
- Performance thumb/palm patch, 6" gauntlet cuff with Retro-reflective silver strips
- Sewn with DuPont[™] Kevlar[®] fiber thread for extra seam strength
- Wool lined for extreme winter protection









#361DLXTKG | S- 2XL

- Heavyweight 3 1/2 oz. cowgrain leather for a tough, yet comfortable, mitt
- Excellent water, oil, and stain-repellent properties
- DuPont™ Kevlar® fiber lining provides 360° cut protection, sewn with DuPont™ Kevlar® fiber thread for extra seam strength
- Performance thumb/palm patch, 6" gauntlet cuff with Retro-reflective silver strips
- Thinsulate™-lined for winter protection

Also available in a non-winter 6" gauntlet cuff (#361DLX6KG)















#398DPPB | S - 2XL

- Heavyweight Buffalo leather palms
 Punkban™ lined palms
- 3 Hi-viz lime-green fingertips
- Sewn with DuPont[™] Kevlar[®] fiber thread for extra seam strength











#6CH5SKG | 9 - 10

- Goatskin low-voltage rubber glove protectors
- Tailored cover glove fits over low-voltage rubber gloves -Class 0, Meets ASTM Standard F696-06
- 360° cut protection thanks to blended DuPont™ Kevlar® fiber lining

Leather protectors provide only mechanical protection for rubber insulating gloves, and when used alone do not provide any protection against serious injury, death or other potential dangers from electrical shocks and burns. Please see SGW Website for further information









#365GC | M - 2XL

- Cowhide grain is extremely durable and abrasion-resistant
- Heat protection of up to 200°C (392°F)
- Outseam sewn and fully welted for added protection
- Sewn with DuPont[™] Kevlar[®] fiber thread for extra seam strength









#S13FRNE | 5-11

- Engineered yarn blends DuPont™ Kevlar® fiber with a variety of strong and inherently flame-resistant fibers
- Flame-resistant neoprene palm coating provides excellent wet and dry arip
- Arc flash testing placed these gloves at level 2, with an Arc Thermal Performance Value (ATPV) of 9.2 cal/cm2















#378G0BKVB | S - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- DuPont[™] Kevlar[®] fiber lining
- Impact-resistance back-of-hand protection
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 34 cal/cm2













#378GKG4P | XS - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- Blended DuPont[™] Kevlar[®] fiber/composite fillament lining
- Impact-resistance back-of-hand protection
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 35 cal/cm2

















#378GKGE | S - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- Blended DuPont[™] Kevlar[®] fiber/composite fillament lining
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 36 cal/cm²

















#378GKTFG | XS - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- Blended DuPont™ Kevlar® fiber/composite fillament lining
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 36 cal/cm²













#S18KGDNE | 5 - 11

- DuPont™ Kevlar® fiber composite filament fiber shell
- Flame-resistant neoprene palm coating provides excellent wet and dry grip
- Dual cut protection; Glove body ANSI cut level A3; Cuff only -ANSI cut level A6
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 25 cal/cm²











#SKG/PXNE | 6 - 11

- Blend DuPont[™] Kevlar[®] fiber/Protex[®] yarns
- Flame-resistant neoprene palm coating provides excellent wet and dry grip
- Good for high heat applications with rated heat protection up to 260°C (500°F)
- Arc flash testing placed these gloves at level 3, with an Arc Thermal Performance Value (ATPV) of 25 cal/cm²

















#378G0BKL | XS - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- DuPont[™] Kevlar[®] fiber lining
- Arc flash testing placed these gloves at level 4, with an Arc Thermal Performance Value (ATPV) of 41 cal/cm²















#378G0BTKL | S-3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- DuPont[™] Kevlar[®] fiber lining
- Thinsulate™ lining for excellent warmth
- Arc flash testing placed these gloves at level 4, with an Arc Thermal Performance Value (ATPV) of 52 cal/cm²













#399GKGL5 | S - 3XL

- High tensile-strength goatskin provides outstanding abrasion resistance
- Blended DuPont™ Kevlar® fiber/composite fillament lining
- Heat protection of up to 140°C/284° F
- Arc flash testing placed these gloves at level 4, with an Arc Thermal Performance Value (ATPV) of 41 cal/cm²











GLOVE SIZING GUIDE

A proper fit is extremely important. An uncomfortable fit causes hand fatigue and ultimately could lead to a potential workplace hazard.

Measure the width of your hand from the base of your first finger and across your knuckles.

50 mm / 2 inches

63 mm / 2.5 inches

75 mm / 3 inches 88 mm / 3.5 inches

101 mm / 4 inches

11 / 2XL

113 mm / 4.5 inches 126 mm / 5 inches

12 / 3XL

140 mm / 5.5 inches





