

ARC FLASH PROTECTIVE CLOTHING

Introduction to Arc Flash Protection

Arc Flash

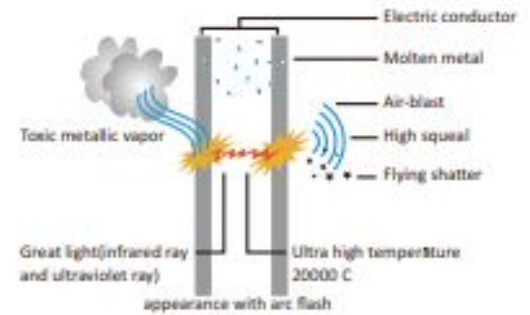
- An arc flash is the light and heat produced from an electric arc supplied with sufficient electrical energy to cause substantial damage, harm, fire, or injury.

Arc Flash Hazard

- Arc flash temperatures can reach or exceed 35,000 °F (19,400 °C) at the arc terminals. The massive energy released in the fault rapidly vaporizes the metal conductors involved, blasting molten metal and expanding plasma outward with extraordinary force.
- A typical arc flash incident can be inconsequential but could conceivably easily produce a more severe explosion. The result of the violent event can cause destruction of equipment involved, fire, and injury not only to an electrical worker but also to bystanders.

Arc Flash Accident

- According to NFPA report, 5-10 accidents happen in United States every day, and more than 2000 deaths in Arc Flash accident every year.
- Average annual electrical accidents in France are more than 125 cases. Arc flash accident accounted for 77%, permanent disability accounted for 21%, and deaths from 30 cases.



Important Safety Recommendations: NFPA70E



Hazard Level 1
 Garment description:
 FR Shirt and FR
 pants or FR
 Overall.

ATPV: 4-8 cal/cm²



Hazard Level 2
 Garment description:
 Cotton underwear,
 FR Shirt and FR
 pants.

ATPV: 8-25 cal/cm²



Hazard Level 3
 Garment description:
 Cotton underwear,
 FR shirt, pants or
 cotton underwear
 plus two FR
 coveralls.

ATPV: 25-40 cal/cm²



Hazard Level 4
 Garment description:
 Cotton
 underwear, FR
 shirt, FR pants,
 Multilayer arc
 flash suit.

ATPV: >40 cal/cm²

cal/cm² ----- Thermal Units
 1 cal ----- 1 gram of water temperature rises to 1°C .
 1cal/cm² ----- Equivalent to put a finger on the energy released by
 burning a cigarette for 1 second.
 1~2cal/cm² energy can cause second degree burns.

ATPV (Arc Thermal Performance Value)
 -----used to characterize arc flash protection capability
 of fabrics. If the energy produced from electric arc in
 accident is less than ATPV of the fabric, the garment
 can protect workers from second and above burns.

Sizes: (cm)

	XS	S	M	L	XL	2XL	3XL
Body Height	153-158	158-163	163-168	168-173	173-178	178-183	183-188
Sleeve Length	56	57	58	59	60	61	62
Chest Girth	112	116	120	124	128	132	136
Shoulder Breadth	44	46	48	50	52	54	56
Outseam	98	100	102	104	106	108	110
Waist Girth	78	82	86	90	94	98	102

