UMBC Electrical Safety Written Plan

Appendix C: Arc Flash PPE Selection Guide Using the Incident Energy Method

NFPA 70E 2018 Table 130.5 (G) – Selection of Arc-Rated Clothing and Other PPE When the Incident Energy Analysis Method Is Used

Incident energy exposure equal to 1.2 cal/cm² up to 12 cal/cm²	Incident energy exposure greater than 12 cal/cm²
Arc-rated clothing with an arc rating equal to or greater than the estimated incident energy Long-sleeve shirt and pants or coverall or arc flash suit (SR) Arc-rated face shield and arc-rated balaclava or arc flash suit hood (SR)[b] Arc-rated outerwear(e.g. jacket, parka, rainwear, hard hat liner) (AN) Heavy-duty leather gloves, arc-rated gloves, or rubber insulating gloves with leather protectors(SR)[c] Hard Hat Safety Glasses or Safety Goggles (SR) Hearing Protection Leather Footwear	Arc-rated clothing with an arc rating equal to or greater than the estimated incident energy Long-sleeve shirt and pants or coverall or arc flash suit (SR) Arc-rated arc flash suit hood Arc-rated outerwear(e.g. jacket, parka, rainwear, hard hat liner) (AN) Heavy-duty leather gloves, arc-rated gloves, or rubber insulating gloves with leather protectors(SR)[c] Hard Hat Safety Glasses or Safety Goggles (SR) Hearing Protection Leather Footwear

SR: Selection of one in group is required
AN: As needed

[a] Arc ratings can be for a single layer, such as an arc-rated shirt and pants or a coverall, or for an arc flash suit or a multi-layer system if tested as a combination consisting of an arc-rated shirt and pants, coverall, and arc flash suit.

[b] Face shields with a wrap-around guarding to protect the face, chin, forehead, ears, and neck area are required by 130.7 (C)(10)(c). Where the back of the head is inside the arc flash boundary, a balaclava or an arc flash hood shall be required for full head and neck protection.

[c] Rubber insulating gloves with leather protectors provide arc flash protection in addition to shock protection. Higher class rubber insulating gloves with leather protectors, due to their increased material thickness, provide increased arc flash protection.

ASTM LABELING CHART FOR RUBBER INSULATING GLOVES

CLASS	TEST AC VOLTS	USE AC VOLTS	USE DC VOLTS	LABEL COLOR	LABEL IMAGE
00	2,500	500	750	BEIGE	
0	5,000	1,000	1,500	RED	
1	10,000	7,500	11,250	WHITE	
2	20,000	17,000	25,500	YELLOW	
3	30,000	26,500	39,750	GREEN	
4	40,000	36,000	54,000	ORANGE