

## CHOOSING PPE FOR ARC FLASH PROTECTION

I had an arc-flash analysis completed on my facility. Now I have labels that describe the calculated incident energy, boundaries, and PPE category for each enclosure. What clothing do my people need?

My clothing manufacturer says my 10.8 ATPV coveralls are Category 2, but I have a label that says 10.8 cal/cm<sup>2</sup> is Category 3. That can't both be right, can it?

When an analysis is done, the incident energy available at a specific location is calculated (in cal/cm<sup>2</sup>). This incident energy level determines which Hazard Risk Category the enclosure belongs in. The Hazard Risk Category determines the PPE as described in Table 130.7(C)(10) of NFPA 70E 2009.

Both tables 130.7(C)(10) and 130.7(C)(11) refer to a minimum arc rating of PPE. The minimum rating for PPE in a category is the maximum exposure of that category. Could it be any more confusing? Probably, but we're here to help sort it out.

What's that mean in real life? Take for example a panel that is calculated to be an incident energy of 10 cal/cm<sup>2</sup>, a nice round number for an example. Table 130.7(C)(10) says that the minimum PPE for Category 2 is 8 cal/cm<sup>2</sup>. The minimum PPE rating is the maximum exposure for that Category, so above 8 cal/cm<sup>2</sup> must be higher than Category 2. Category 3 has a minimum rating for PPE of 25 cal/cm<sup>2</sup>.

Wait, I have to wear at least 25 cal/cm<sup>2</sup> clothing for a 10 cal/cm<sup>2</sup> exposure?

Yes, because it is a Category 3 exposure.

I can buy this 10.8 ATPV set of coveralls we mentioned before. Their tag says Category 2. Are you saying that my 10.8 ATPV coveralls aren't good enough for a 10 cal/cm<sup>2</sup> incident energy because it's a Category 3?

That's right. Your clothing manufacturer, by labeling these coveralls as Category 2, is also saying the same thing.

Try a "keep it simple & safe (KISS)" approach to choosing PPE. Annex H of NFPA 70E 2009 outlines a Simplified, Two-Category, Flame-Resistant (FR) Clothing System. There are also options for layering if you can prove that the combination has been tested and will result in the desired level of protection (Annex M). There are options available when choosing PPE and these are important decisions to make. What are you doing to protect your people?