



How to Wear Flame Resistant (FR) and Arc Rated (AR) Clothing

By Peter Clark | January 2021

1. A Protective Outer Layer

- First layer to be exposed and must always be flame resistant.
- Flammable and/or fusible (melt-able) clothing can continue to burn after the electric arc or fire incident contributing heat to:
 - Any exposed body areas.
 - Through the PPE to the body.

2. With All Closure Systems Fastened (Includes collar, front torso, arms, and legs)

- Flaps, buttons, snaps, or zippers fastened.
- Not being closed compromises the PPE's protective integrity:
 - Thermal insulating properties are diminished or lost.
 - Non-melting, but flammable base layers that could enhance thermal insulation, can instead ignite, and contribute to burn severity.

3. With Base Layers That Do Not Diminish Protection

- Do not wear fusible clothing, it is better to wear nothing under your PPE compared to clothing that can melt and thereby efficiently transmit heat to the skin.
- Non-melting, but flammable clothing can enhance thermal insulation. However, when there is the potential for electric arcs, due to their explosive nature, the arc rating for the outer protective fabric must be sufficient to prevent "break-open" and ignition of the base layer.
- FR/AR base layers enhance thermal insulation and will not ignite. When arc tested in combination with an outer FR/AR layer an enhanced clothing system arc rating can be used for that FR/AR clothing combination.

4. In A Good State of Repair

- Rips and tears will compromise the integrity of the PPE, such as having closure systems improperly fastened.
- Heavy soiling with flammable contaminants could be similar to wearing a flammable and/or fusible outer garment.