FRC (Flame Resistant Clothing): Arc and Flash Fire Information

This subject is very difficult to fully understand. The evolution of FRC regulations have come a long way since the early 1990s. Currently you must match the hazard in selecting clothing. Arc Rate (AR), Flash Fire Rated (FFR) and Fire Fighter Rated.

What are we trying to do? Protect ourselves from an Arc Flash, Flash Fire and Other Thermal Hazards.

Flame Resistance: The property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or nonflaming source of ignition, with or without subsequent removal of the ignition source. (NFPA 2113)

How do I determine if arc rated clothing is needed in my facility?
Conduct a Flash Fire Assessment. This assessment is an important first step to the process. A flash fire is a slow deflagration of an unconfined and unobstructed gas cloud, where air and fuel are premixed. Persons inside the cloud suffer generally a fatal injury. The radiation effects outside the flammability limits can be assumed as negligible.

What standards are out there to review:

1) National Electrical Safety Code.
2) OSHA 1910.269.
3) NFPA 70E.

Multi-Hazard PPE.
OSHA now requires FR winterwear and rainwear when exposed to arc or flash fire. This allows employers to outfit workers in clothing that is appropriate for multiple hazards (arc, flash fire, high visibility, molten metal). New products on the market meet ANSI 107, ASTM F1506, and NFPA 2112.

Check the Label on the Garment:
Review the label and make sure all the required protective information is on the label.

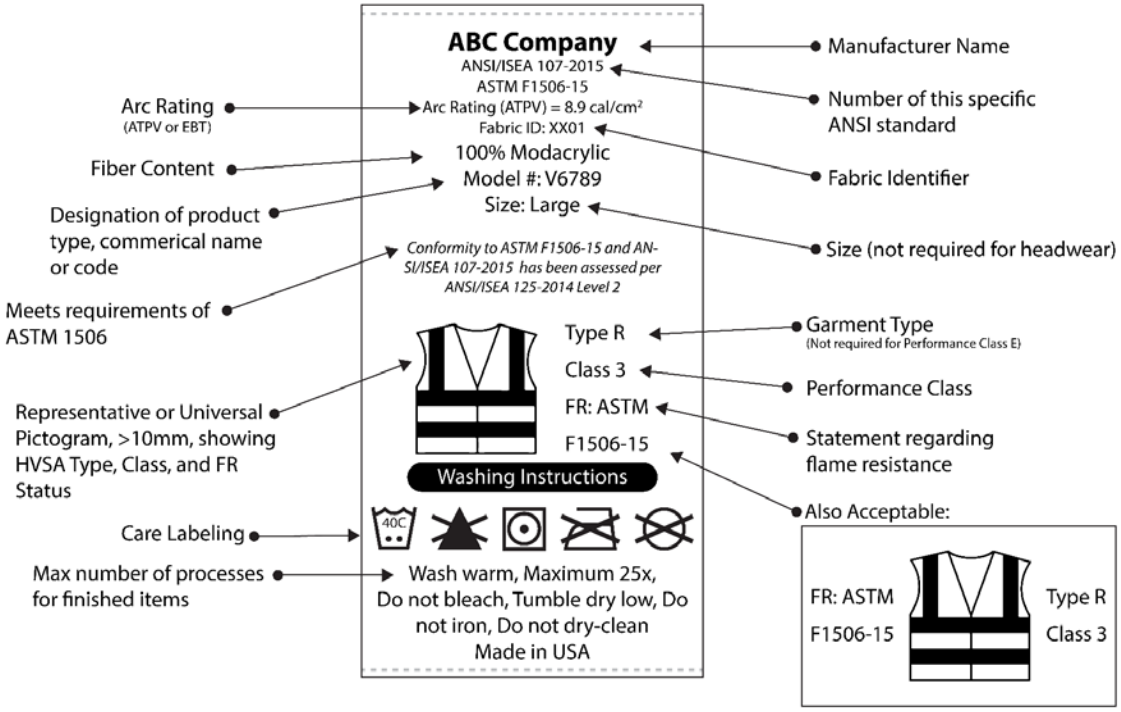
Simplified and Fool-Proof PPE Program:
One way to simplify things is to use the Two-Category Approach. Choose either ARC/CAT 2 (8 cal/cm2) or ARC/CAT (40 cal/cm^2). Determine a worst-case scenario at your facility and outfit those workers with the proper PPE. This eliminates having to calculate out and determine the proper PPR for each application.

Layering Principles:
Non arc-rated layers add no protection, but may be allowed. Cotton t-shirt cannot be counted as adding protection. Non arc-rated clothing may be worn IF it is non-melting (i.e. cotton, wool, silk, leather). Layers of arc-rated garments may provide additional protection; only arc-rated systems can count. Arc-rated outer layer (such as a high visibility vest) over a protective system (i.e. an 8 cal/cm^2 ARC 2 shirt) does not reduce the rating of the under layer. Non arc-rated melting vests may not be worn over arc rated layers.

How Do I Know If My Garment Complies? Ask for certification letters from the clothing manufacturer. Check with your uniform supplier. Check for an ISO 17025 Accredited Lab. Perform a Third Party Evaluation.

Specifying Options. Performance based criteria narrows the search. Look for rating levels, review applicable standards, inherent or treated material, specific fiber content, specify ANSI 125 Level 1,2 or 3. Obtain a free PDF of ANSI/ISEA 125 from ISEA. Specify a level using the new ASTM PPE conformity Guide. Standard number

Example Label Compliant with ANSI 107, ANSI 125 and ASTM F1506



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