

ProGARM[®]
PROTECTING LIVES

THE DIFFERENCE BETWEEN ARC FLASH & FLAME RESISTANT CLOTHING

WHAT YOU
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WHAT'S THE DIFFERENCE BETWEEN ARC FLASH & FLAME RESISTANT CLOTHING?

It's a question we're asked on a regular basis – what's the difference between Flame Resistant garments and Arc Flash rated clothing and does it matter?

The short answer is yes; it matters a great deal and it's important to be aware of the fundamental difference between the two categories.

Put simply, arc-rated clothing is Flame Resistant, but Flame Resistant clothing doesn't necessarily offer Arc Flash protection. That's why it's incredibly important to understand the capabilities of each garment you buy and how it will protect you and your team.

WHAT IS AN ARC FLASH?

An Arc Flash occurs when an electrical discharge travels through the air and releases an intense burst of energy. It can cause serious harm to anyone caught by it, so adequate Arc Flash protection is critical.

An electric arc, also known as an arc discharge, happens when an electrical discharge or short circuit moves through the air. Voltage spikes, worn connections, cable strikes or gaps in insulation are just some of the many potential causes of this potentially fatal flash of intense energy.

Arc Flash temperatures reach more than 19,000°C, which will burn the skin and clothing of operatives up to five or six metres away within fractions of a second.

Arc Flashes can also create an explosive pressure wave that can throw workers across the room with a sound blast that can rupture eardrums. Its incredibly bright flash can also cause temporary or even permanent blindness.

HOW DO I KNOW IF MY TEAM IS AT RISK?

Most commonly, Arc Flash risk is associated with those working within the Industrial Electrical sector, where operatives work with high and low-voltage electricity.

But one of the other major causes of Arc Flash incidents is a cable strike which often happens when there's not enough, or inaccurate information about underground services. Workers in the power generation, rail, and petrochemical industries are also at risk of Arc Flash incidents.





FLAME RESISTANT STANDARDS IN THE UK

In the UK, flame resistance is measured by two key standards – EN ISO 11612:2015 and EN ISO 14116:2015.

It is important to note that, while they form part of your team's protection against bursts of energy, neither of these standards deals with sustained exposure to heat and flame.

Clothing that conforms to these EN standards is deemed to be Flame Resistant (FR) and garments are assessed according to their ability to deal with limited flame spread.

THE REQUIREMENTS FOR ARC RATED CLOTHING

Arc rated clothing is altogether more complex and garments undergo far more stringent testing to prove their protection against exposure to such intense heat.

While FR garments may be suitable, they're not specifically designed and manufactured to withstand an Arc Flash incident and can't guarantee the necessary level of protection.

Take a look at this video that shows what happens when we tested and compared an arc flash polo shirt and waterproof against an FR waterproof and standard polo. The results show how arc clothing is the best defence against an Arc Flash.

Arc rated garments are designed to provide protection from Arc Flash incidents and are tested to either the Open Arc Test Method or the Box Test Method to ensure their compliance with IEC 61482. It's through these tests that the significant differences between both FR and Arc rated clothing can be proven.

Other key differences are that Arc rated garments are tested as a complete garment assembly. This tests that the garment structure will remain intact after the Arc exposure.

Components such as buttons, zippers and Velcro brand fasteners should all still be functional to avoid causing further injury to the wearer by melting or through heat transfer.

It's often the small features such as what the components are made of and how they're applied to a garment that creates the biggest differentiator between FR and Arc garments.



Arc Flash vs. FR (Limited Flame Spread)



UNDERSTANDING CARE LABELS ON ARC FLASH RATED CLOTHING

There's a lot of misinformation and genuine confusion around the capabilities of specific garments. However, where your team's safety is concerned, you can't afford confusion. Knowing your terminology is key, and so is clear labelling of the protective clothing you buy.

At ProGARM, we take our commitment to clear and concise labelling extremely seriously. We know the hazards end users face on a daily basis and that they need to be effectively equipped to deal with them.

Our labelling system includes all the information about the garments they need, and displays it in a clear style to make sure there's no room for misinterpretation.

Thanks to the clear and consistent SafetyICON system we use throughout our entire range, you can tell from a quick glance whether a garment offers Arc Flash protection.

We're also proud of the level of information we supply on our care labels. A typical label will include details of that garment's relevant EN Standards, allowing wearers to see exactly how they'll be protected for specific tasks. We're also committed to supply chain traceability, so every garment contains a batch number tracking the origins of fabrics, threads and components.

We know that misinformation costs lives. Understanding the distinction between Flame Resistant and Arc rated clothing is critical and could be all the difference in whether or not your colleagues go home at the end of their shift. If you have any questions at all, please just ask. We'll be more than happy to help you.



SafetyICON™
EN Standard
identification

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