
3 SUSTAINABILITY CONSIDERATIONS WHEN EVALUATING FR/AR APPAREL

What are manufacturers doing to lessen the environmental impact of this type of clothing?

Flame-resistant (FR) and arc-rated (AR) apparel are garments specifically designed to protect the wearer from the hazards of flame and heat, including arc flash and flash fire. This type of personal protective equipment (PPE) is most commonly worn by workers in high-risk industries such as electric utilities, welding and oil and gas.

Donning of FR/AR apparel is one of the most essential practices in place for protecting workers from the flame and heat hazards they may encounter on the job. However, this type of clothing also has a significant impact on the environment. As legislation and consumer demand for more sustainable options continue to increase, it's important to understand that sustainability goes beyond simply recycling apparel after it's met the end of its life cycle. In the remainder of this article, we'll explore three key sustainability considerations to keep in mind when evaluating FR/AR garments.

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01 Materials Selection

There are several ways in which the sustainability of FR/AR clothing can be improved. One is through the use of more sustainable materials. Traditional FR/AR clothing is often made from performance synthetic fibers that cannot easily be recycled. These materials are not biodegradable and can take hundreds of years to decompose in landfills. Work is ongoing in the industry to develop methods of reusing or recycling these fibers that do not materially change their characteristics.

There are some recycled or bio-based fibers that can be utilized in FR/AR clothing, such as polyester and nylon. These materials reduce the number of new resources that must be used as well as the reliance on fossil fuel feedstocks. Sourcing materials made in collaboration with organizations like [Lenzing](#)—which creates fiber product lines from sustainably grown natural fiber sources, like renewable wood, that are biodegradable and compostable—can assist in the overall sustainability of a garment.

Another way to improve the sustainability of FR/AR clothing is through the use of durable, long-lasting materials. By using materials that are designed to last longer, companies can reduce the need for disposable FR/AR clothing and lower the amount of waste that is sent to landfills.

02 Manufacturing Practices

According to the [U.S. Environmental Protection Agency](#), 17 million tons of textiles were generated in 2018. And the [European Parliament](#) has estimated that textile production accounts for 10% of global greenhouse gas emissions. The production process of FR/AR clothing can have a significant impact on the environment and can contribute to pollution and waste. By identifying and working with manufacturers that prioritize sustainable practices, like waste elimination at plants and greenhouse gas emission reduction, you can make an impact on the overall sustainability of garments.

Learning about the efforts of fabric manufacturers on a production process basis can help you source more sustainable FR apparel. A few key indicators of environmental stewardship at a plant level include efforts to lower water usage, a reduction in textiles sent to landfills, use of renewable energy sources like cogeneration and in-house recycling programs.

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03 Finishes and Certifications

Functional chemistry is often critical to the performance of FR/AR apparel. Chemicals provide some of the most sought-after and important benefits of the fabrics used in garments, including water repellency and flame resistance. However, these chemicals can be harmful to the environment.

Amid a media flurry of coverage and federal and state legislation, perfluoroalkyl and polyfluoroalkyl substances—commonly referred to as “PFAS” and most often used in garments to provide water and stain repellency—are being more closely evaluated in FR/AR apparel. Working with manufacturers that have found alternative solutions and rid their fabrics of these so-called “forever chemicals” is an important step in protecting both the health of your workers and the future of our planet.

There are a variety of organizations and/or certification programs providing sustainability oversight to the FR/AR clothing industry, including [OEKO-TEX](#). Look for garments made from materials that have been certified through rigorous testing standards to ensure they were developed without any harmful substances.

Conclusion

The sustainability of FR/AR clothing is an important issue that must be taken into consideration. By using more sustainable materials, eco-friendly production methods and programs to recycle and repurpose used clothing, plus more closely evaluating the materials used on a molecular level, manufacturers can greatly improve the sustainability of FR/AR clothing. These efforts not only better protect the environment, but they also benefit the workers who wear the clothing, continuing to help ensure that they are protected from flame and heat hazards.

ABOUT THE AUTHOR

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