

Personal Protective Equipment

## Selecting FR Clothing for Cooler Weather

Brought To You by ISEA | Jan 15, 2019

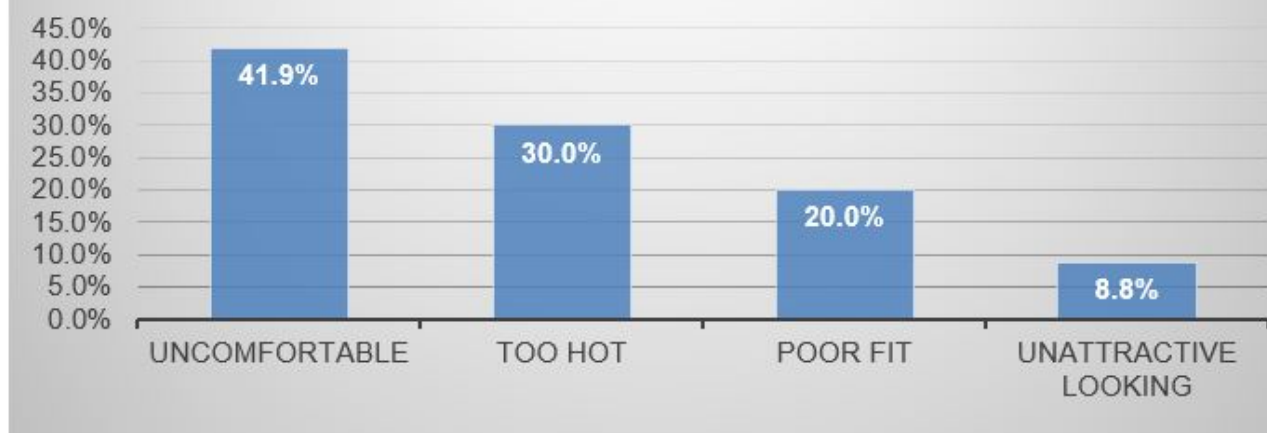
As the winter months approach and the temperature drops, it's important to keep workers warm by selecting the proper FR clothing. The cooler temperatures create a new hazard for workers: **cold stress**. Similar to **heat stress**, this occurs when someone loses the ability to regulate their body temperature due to being exposed to extreme temperatures. As skin temperature drops, the core body temperature will eventually drop too. This can lead to a decrease in productivity and performance, but it doesn't stop there. Cold stress can eventually lead to hypothermia, which can cause workers to lose coordination, a decrease in breathing and heart rate, and a loss of consciousness. To protect your workers from cold stress, it is important to select the proper FR clothing for the cold weather.

Below is a list of considerations to follow when selecting FR clothing for your team for the cooler months:

### 1. COMPLIANCE

First and foremost when selecting FR clothing is remaining compliant to industry and employer standards for safety. The first step in remaining compliant is to identify all potential hazards. As outlined by **ANSI**, **NFPA**, and **OSHA**, employers are required to conduct an arc flash study and hazard risk assessment to identify all potential hazards. Once all hazards have been identified, the employer must take the necessary steps to engineer out potential hazards. For the hazards that can't be eliminated, the employer must provide the appropriate PPE and educate employees on the potential hazards and the use of PPE. Potential hazards can be caused by the environment (heat/cold, gas/vapor exposure), work organization (unnecessary manual handling), equipment (ladders, moving equipment/vehicles), thermal hazards (welding, radiant heat), heights (ladders, elevated workspace, leading edge, confined space), and electricity (electric shock, arc flash). Understanding specific work practices and hazards will allow you to identify if you need daily **FR work wear** and/or **task-based PPE**.

## What do you think are the main reasons for noncompliance with PPE protocols? (Select all that apply.)

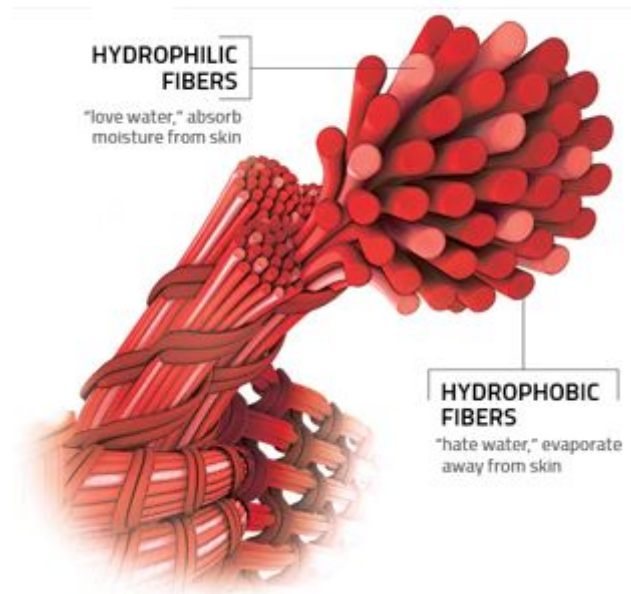


## 2. COMFORT

One of the main reasons workers cite for non-compliance with PPE protocols is that the FR garments are just too uncomfortable so they don't want to wear them. Other common complaints are that PPE is too hot or has a poor fit. The best way to fix this problem is to provide workers with garments they actually want to wear and garments that improve productivity through comfort. Based on our end-user research, a comfortable garment has three important characteristics: lightweight, breathability, and moisture wicking. A lightweight garment can add warmth when needed without weighing down the worker and hindering the range of motion. Breathability allows heat and air to flow through the garment to prevent overheating while moisture-wicking fabric works to keep the worker dry. We combined these three characteristics into what we call the **TECGEN Triangle**. FR clothing that has this combination can improve worker safety and productivity by eliminating the distraction of physical discomfort.

## 3. MOISTURE WICKING

It may be getting cold outside, but that doesn't mean that workers stop sweating. Moisture and dampness from sweat can increase the rate of heat loss from the body, accelerating cold stress. The best way to combat perspiration and the resulted cold stress is to have FR clothing that is moisture wicking. This is an important part of not just comfort, but worker safety and productivity as well. Moisture wicking fabrics are created by using a blend of hydrophilic and hydrophobic fibers. The hydrophilic fibers are "water loving" – meaning they actively pull moisture in off the skin. Hydrophobic fibers are "water hating" – meaning they actively push moisture out to the surface of the garments, allowing it to evaporate. The combination of these two fibers creates a moisture-wicking fabric that pulls moisture from the skin and effectively releases it back into the air, drying 2-3 times faster than cotton. Layering multiple moisture-wicking garments from base layers to work wear creates a **moisture management system** that will help keep workers dry and comfortable.



#### 4. LAYERING

Layering is a great way to take your FR work wear into the next season. From moisture-wicking base layers to FR outerwear, layering garments allows workers to stay warm and avoid cold stress during the winter months. Our **FR Control 2.0 base layers**, including shirts, long johns, and balaclavas, work to keep workers warm when it's cold and cool when it's hot by proactively regulating skin temperature (+/- 3 degrees). Moisture-wicking garments will help maintain skin temperature as well. To further prevent cold stress, OSHA recommends workers wear light, loose layers because they provide better insulation and are easy to remove. Trusted brands such as **TECGEN Select** and **DRIFIRE** make a variety of comfortable daily work wear options from FR pants and jeans to FR work shirts and coveralls that can be layered on top of the base layers. For added warmth on top, an FR sweatshirt is a great option. Available in three styles – zip front, crew neck, and pullover – our **FR sweatshirts** are arc rated and come in multiple weight options, allowing you to control the amount of warmth added.

As the temperature drops, it's important to be aware of the potential hazards that can arise. Cold temperatures, decreased visibility and foul weather are just a few of the potential hazards workers can face as we enter the winter months. The best way to ensure safety and productivity is by supplying workers with FR clothing that keeps them warm and comfortable. Following these considerations, along with employer requirements, will help you select the appropriate FR clothing for the cold weather.



*Previously featured on ISEA's Knowledge Center.*

[www.mscdirect.com/betterMRO](http://www.mscdirect.com/betterMRO)

Copyright ©2024 MSC Industrial Supply Co.