



Is your FR rainwear really FR?

NASCO Industries Inc.

Flame-resistant (FR) clothing requirements have been around for several years. For companies required to have an FR clothing program, they have done a fairly good job of making sure they are protecting their workers with the proper FR clothing. However, there is one area of FR clothing programs where a gap exists. This area is the FR rainwear program. Sometimes it is an afterthought, and many times it is due to a lack of understanding of what is needed.

Several companies are using some form of “FR rainwear,” but the issue is whether it’s a proper level of protection needed to protect against their flame hazards. There are specific FR rainwear options that are designed to protect against specific flame hazards. It’s important to first clarify what the “FR” claim of the rainwear means.

Several companies label their rainwear as “FR” by citing the garments with irrelevant test methods or standards, which is confusing. Some examples are ASTM D6413, NFPA 701 (National Fire Protection Association) and ASTM F2701. Unfortunately, these are test methods only

or they are standards that don’t test against a type of flame exposure workers have the potential of seeing. So, how do you know how these garments will do in those scenarios? The answer: You don’t.

To determine what a worker needs depends on the type of flame hazard the worker is needing to protect against. The most common protection FR rainwear users need to protect against is either hydrocarbon flash fires or electric arc flash. Both are extremely dangerous, and both can result in debilitating or catastrophic injuries. There are only two rainwear standards that have been developed for specific flame hazards — Flash Fire Protective Rainwear ASTM F2733: Standard Specification for Flame Resistant Rainwear for Protection Against Flame Hazards; and Electric Arc Protective Rainwear ASTM F1891: Standard and Specification for Arc and Flame Resistant Rainwear.

The primary objective of these standards provides performance criteria for rainwear that meets a minimum level of thermal and physical performance when exposed to a laboratory-simulated electric

arc flash or flash fire exposure. For ASTM F2733, rainwear is exposed to a three-second hydrocarbon flash fire and can allow no more than 40-percent total body burn. For ASTM F1891, the material is exposed to an electric arc flash to determine the energy level at which it will provide thermal protection before the probability of a second degree burn.

There are other testing elements of these standards the rainwear is required to meet besides the specific flame test. The rainwear is also required to meet strength testing, leak testing of material and seams, design requirements, and markings that include the thermal protective performance to name a few.

So what questions commonly come up when shopping for the rainwear? Provided are some common FAQs when shopping for FR rainwear:

- *If I am looking for a rain suit that claims to meet one of these requirements, how can I be sure it does?* By requirements of both ASTM F2733 and ASTM F1891, the product label must clearly reference the standard it is compliant with as well as the

thermal protection value it provided when tested (i.e., ASTM F2733: Total Body Burn 12 percent). If you are still confused, contact the manufacturer and ask.

- *I am supposed to wear NFPA 2112-compliant clothing. Is there an NFPA 2112 rain suit?* NFPA 2112 is a performance standard that also tests garments against a hydrocarbon flash fire. However, NFPA 2112 was not intended to test coated fabrics like rainwear. ASTM F2733 is the complementary standard to select in rainwear if you are required to wear NFPA 2112 garments.

- *I wear NFPA 2112 clothing that already is FR. Does it really matter if I use a compliant FR rain suit?* If you do not use the appropriate rainwear that is designed to hold up the flame hazard, then you have no assurance what it will do. In most cases, traditional rainwear will melt, drip and continue to burn, becoming a fuel source that could cause significant burn injury even if you have an NFPA 2112 garment underneath.

For more information, visit www.nascoinc.com or call (888) 767-4218. ●

WHAT DOES FR MEAN TO YOU?

In my line of work, it means **my raingear provides flash fire protection**. That’s why I only wear ASTM F2733 compliant raingear. The right FR for the job.

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