

PROTECTIVE APPAREL OF NOMEX®: THE SUPERIOR CHOICE IN FLAME-RESISTANT PROTECTION

The Need for Flame-Resistant Garments

Every year, hundreds of industrial workers are killed or seriously injured by flash fires or electric arcs. Many of these injuries could have been minimized or avoided if workers had been wearing flame-resistant garments.

A matter of seconds can mean the difference between minor burns and life-threatening injuries. A flame-resistant garment helps protect the wearer from the heat and flames of flash fires and electric arcs; it also provides valuable seconds for escape.

DuPont – The Leader in Flame-Resistant Protection

For more than 30 years, protective apparel made from DuPont™ NOMEX® brand fiber has provided superior thermal protection from flames, flash fires and electric arcs. The unique molecular structure of NOMEX® makes it inherently flame resistant. Garments of NOMEX® protect workers in the petroleum, petrochemical, chemical, and electric and gas utility industries. Professional firefighters, racecar drivers, U.S. military personnel and NASA astronauts also wear garments of NOMEX®.

Unmatched Thermal Performance

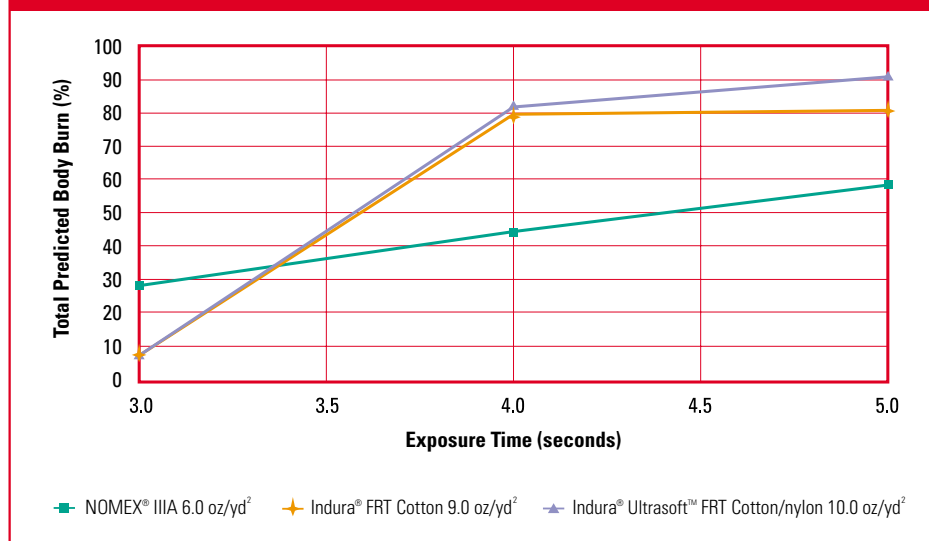
The effectiveness of NOMEX® has been proven and documented in laboratories, field tests and real-life flash fire and electric arc situations. Garments of NOMEX® consistently provide outstanding thermal performance because NOMEX® IIIA:

- Is inherently flame resistant.
- Does not burn or melt and drip.
- Provides permanent protection that won't wash out or wear away.
- Minimizes break-open and maintains a stable, inert barrier between the fire/arc and skin, protecting the wearer from direct exposure.
- Forms a tough, protective char when exposed to flame, and stays supple until it cools.
- Meets NFPA 1975 for firefighters' stationwear.
- Meets the ASTM F-1506 standard for workers' apparel as protection from electric arc exposure.

Durability and Cost Effectiveness

Garments made with NOMEX® thermal technology are extremely durable and resist abrasion, tears and chemicals. They're also an excellent value, lasting three to five times longer than other standard and protective fabrics, including 100% cotton and flame-retardant treated (FRT) cotton. In lease, rental and purchase programs, the outstanding wear life of garments of NOMEX® IIIA can contribute to bottom-line savings.

Results of Instrumented Thermal Manikin Testing



All coveralls were exposed to a 2 cal/cm²-sec heat flux; each data point represents the average of three measurements. All garments were laundered and dried one time before testing; 100% cotton undergarments were used.

Anti-Static Performance

Workers must be constantly aware of static electricity hazards and must use proper grounding procedures, both for themselves and equipment. As an added margin of safety, garments of DuPont™ NOMEX® IIIA reduce the clothing's contribution to static charge buildup on the body. NOMEX® IIIA is made with a static-dissipative fiber, which reduces the static generated in both fabric-to-fabric and fabric-to-surface rubbing, even in low humidities. NOMEX® IIIA also reduces static cling, which makes the garment more comfortable to wear.

Lightweight Comfort

Garments of NOMEX® are as comfortable to wear as other work clothing. Lightweight, breathable fabrics of NOMEX® brand fiber are designed to transport moisture away from the skin, which helps wearers feel cool and dry. Side-by-side wear tests show that fabric weight is the single greatest factor in controlling garment comfort, and that the lightweight comfort of NOMEX® is often preferred over other protective fabrics. In addition, protective apparel of NOMEX® is available in a variety of fabric weights to suit any climate.

Professional Appearance

Flame-resistant protective apparel of NOMEX® combines style and functionality with a professional appearance. NOMEX® is available in a wide range of colors and garment styles, including jackets, parkas, slacks, jeans, shirts, polar fleece and switching coats.

Easy Care

Garments of NOMEX® are easy to launder and rarely need pressing. Normal home or commercial laundering and dry cleaning techniques provide good results. The protection is permanent and cannot be washed out or worn away.

Work Clothing Performance Characteristics

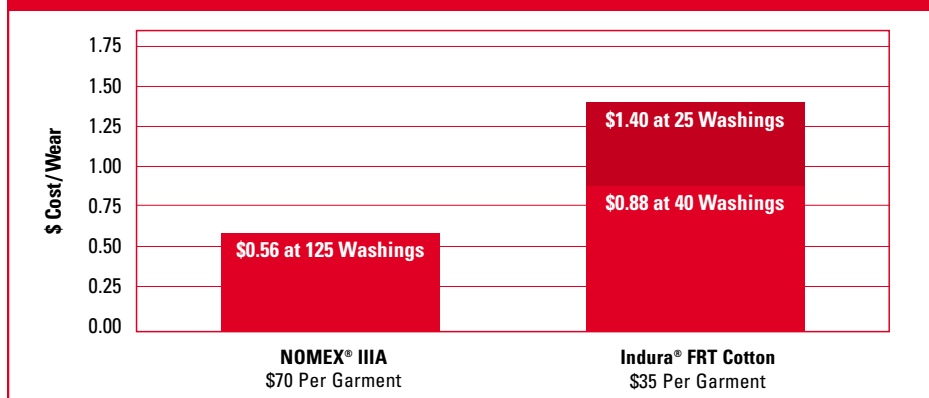
Fiber Property	NOMEX® IIIA	FRT COTTON
Permanent Flame Resistance*	Yes	No
Melting and Dripping	No	No
Abrasion/Tear Resistance	Yes	No
Cost Effective	Yes	No**
Expected Wear Life, yr***	3-5	1
Consistent Anti-Static Performance	Yes	No
Permanent Press Appearance	Yes	No

- * Cannot be compromised by laundry process.
- ** See Garment Cost Per Wear Cycle below.
- *** Average wear life based on actual industry experience and laboratory durability test correlations.

All manikin tests are laboratory simulations of flash fire exposures. These laboratory simulations are severe and tax the performance properties of materials from which the clothing is made. The results of these tests are laboratory predictions of relative burn injury based upon several factors, including fabric type, fabric weight, garment styling and fit, number of launderings, exposure energy and exposure time. The results should be not used to predict garment performance in actual fire situations.

We believe this information is the best currently available on the subject. It is offered as a possibly helpful suggestion in experimentation you may care to undertake along these lines. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability whatsoever in connection with this information. Those persons intending to use recommendations contained in this publication concerning protective clothing of NOMEX® brand fiber should first satisfy themselves that the recommendations are suitable for their use and meet all appropriate safety and health standards.

Garment Cost Per Wear Cycle



Because garments of NOMEX® IIIA can be washed and worn at least 125 times, coveralls of NOMEX® IIIA priced at \$70 provide protection for only \$0.56 per wear. In contrast, with an average wear life of only 25 to 40 washings (from ASTM publication STP 1133), coveralls of FRT cotton priced at \$35 can cost between \$0.88 and \$1.40 per wear.

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