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**UNCOMPROMISING PROTECTION.  
UNPARALLELED COMFORT.**



Discover Our North American  
Flash Fire Product Portfolio.

 **WESTEX**<sup>®</sup>  
by *Milliken*

# Our Commitment to FR Worker Safety

At Westex by Milliken, worker safety is our priority. We're leaders in secondary arc rated (AR) and flame resistant (FR) protection, backed by 150 years of Milliken innovation—and we go further than anyone else to ensure workers are protected, comfortable and able to return home safely each night.

At the heart of our commitment is engineering: scientific expertise and advanced, custom-made equipment that guarantees flame resistance for the life of the garment. Market proven, with tens of millions of yards out in the field, our fabrics don't just meet standards—they integrate safety and comfort in ways that were once considered impossible. But we don't stop there with engineering and innovation. Through extensive educational outreach, we've helped millions of workers better understand arc flash, flash fire and other thermal hazards. Because helping workers feel confident in any and every condition comes down to innovation, exceptional engineering and education.

For more information, visit [westex.com/fabrics](https://westex.com/fabrics) ▶

 **Westex**  
**Synergy® Pro**

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# Westex protection delivers on the flash fire standard.

## The Need

In oil, gas, chemical and petrochemical industries, the threat of flash fire exposures has necessitated the use of flame resistant clothing. Flame resistant clothing will minimize burn injury and provide the worker a few seconds of escape time. Non flame resistant clothing can ignite in a flash fire exposure, providing an additional fuel source and dramatically increasing the burn injury percentage and severity well beyond that of the initial exposure.

## The Standard

The National Fire Protection Association (NFPA) developed NFPA® 2112 as the industry standard for flame-resistant garments designed to protect against Flash Fire. The official title for NFPA® 2112 was recently updated to “Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short Duration Thermal Exposures from Fire.” The Canadian General Standards Board (CGSB) has also developed the CAN/CGSB 155.20 standard to protect against hydrocarbon flash fire and optionally steam and hot fluids.

## The Solution

When evaluating fabrics for an FR clothing program to comply with NFPA® 2112 or CAN/CGSB 155.20, Westex offers a range of industry-leading fabrics that maximize both protection and comfort. With our proprietary, market-proven technology, you can have flame resistance that is guaranteed for the life of the garment without sacrificing soft, breathable comfort.

The NFPA® 2112 flash fire standard requires that all mannequin testing be conducted at three seconds. The CGSB certification states the minimum requirements and test methods for performance of protective workwear worn for protection against unplanned exposure to hydrocarbon flash fire and optionally steam and hot fluids. Each of these Westex fabrics in our flash fire portfolio meets the requirements of NFPA® 2112 or CAN/CGSB 155.20, and more importantly, provides superior flash fire protection when compared to other industry-leading FR fabrics. Around the globe, companies are making Westex fabrics their choice for flash fire protection because they provide an uncompromising blend of protection, comfort and value.



## Science is the key to FR fabric technology.

There is a great deal of science that goes into making any type of FR fabric. The truth is that manufacturing FR fabrics is complicated, and the fabric is the key part of the garment's FR protection. Make sure that the FR fabric in your garment is manufactured by a credible supplier you trust—your safety depends on it.

At Westex by Milliken, we offer an extensive portfolio of AR/FR fabrics that include various types of fibers, yarns and FR technologies. We guarantee all of our product lines to be flame resistant for the life of the garment. Our team of engineers uses state-of-the-art equipment, advanced proprietary processes and patented technologies to deliver the best possible AR/FR fabrics in the marketplace. We are an industry leader, with our fabrics worn by thousands of workers worldwide, backed by 150 years of Milliken innovation.

We know you need  
to protect your crew.  
Help them feel confident.

**EXCELLENT MULTI-HAZARD PROTECTION**  
NFPA® 2112 Certified

## FLASH FIRE PRODUCT PORTFOLIO

Guaranteed flame resistant for the life of the garment.

### Blends

 Westex®  
DH Air™

 Westex®  
DH

### Aramid

 Westex  
Synergy® Pro

 Westex  
Synergy®

### Cotton & Cotton Rich

 Westex  
Indigo®

 Westex  
UltraSoft®

 Westex  
UltraSoft AC®

 Westex  
UltraSoft® Flex

### Key

#### LAUNDRY COMPATIBILITY

 Industrial Laundry

 Lite Industrial Laundry

 Home Laundry

#### NFPA 70E® PPE CATEGORY

 Category 1

 Category 2

 Category 3

 Category 4



Our new, patent pending, Westex® DH Air™ brings all of the great characteristics you've come to love from Westex® DH, to a lightweight, dual hazard fabric.

Westex® DH Air™ Fabrics								
STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm²)	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd² (g/m²)	LAUNDRY	TYPICAL GARMENT APPLICATIONS
8811	5.5 oz 2x1 Twill	47% Lenzing™ Lyocell, 38% Modacrylic, 15% Aramid	9.1 ATPV	Yes (31.7%)	X	5.5 (186)	I H	Lightweight Shirts, Lightweight Coveralls



A popular choice for FR protection and performance, Westex® DH provides outstanding breathability and optimized moisture management to keep the wearer cooler, drier and more comfortable. Westex® DH also retains an excellent after-wash appearance, with a low propensity for pilling.

Westex® DH Fabrics								
STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm²)	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd² (g/m²)	LAUNDRY	TYPICAL GARMENT APPLICATIONS
0680/ 0681	4.5 oz Jersey Knit Base Layer	48% Lenzing™ Lyocell, 40% Modacrylic, 12% Aramid	4.7 ATPV	Yes (42.6%)		4.5 (152)	H	Base Layer Shirt
6800	5.5 oz 2x1 Twill	48% Lenzing™ Lyocell, 40% Modacrylic, 12% Aramid	6.6 ATPV	Yes (30.6%)	X	5.5 (186)	I H	Lightweight Shirts, Vests
6820/ 6830	6.5 oz 2x1 Twill	48% Lenzing™ Lyocell, 40% Modacrylic, 12% Aramid	8.9 ATPV	Yes (18.3%)	X	6.5 (220)	I H	Lightweight Shirts, Coveralls
6860/ 6870	7.5 oz 2x1 Twill	48% Lenzing™ Lyocell, 40% Modacrylic, 12% Aramid	8.8 ATPV	Yes (11.2%)	X	7.5 (254)	I H	Shirts, Pants, Coveralls, Jackets
6920	8.0 oz 2x2 Canvas	48% Lenzing™ Lyocell, 40% Modacrylic, 12% Aramid	11 ATPV	Yes (9.3%)	X	8.0 (271)	I H	Pants, Coveralls, Jackets



**Westex**  
**Synergy® Pro**

Westex Synergy® Pro is the next evolution of our Aramid offering at Westex by Milliken. Through thoughtful design, Westex Synergy® Pro offers a softer feel for end-user comfort and improved color uniformity when compared to Westex Synergy®.

**Westex Synergy® Pro Fabrics**

STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm²)	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd² (g/m²)	LAUNDRY	TYPICAL GARMENT APPLICATIONS
7346	4.5 oz Plain Weave	93% Teijinconex® Neo, 5% Twaron, 2% Antistat	5.4 ATPV	Yes (34.2%)	X	4.5 (152)	 	Shirts, Lightweight Coveralls
7366	6.0 oz Plain Weave	93% Teijinconex® Neo, 5% Twaron, 2% Antistat	6.1 ATPV	Yes (20.5%)	X	6.0 (203)	 	Pant, Coverall, Jacket

**Westex**  
**Synergy®**

Westex Synergy® is made with 100% Nomex® IIIA. Nomex® is an inherent fiber and has been a leader in heat and flame protection for more than 45 years.

**Westex Synergy® Fabrics**

STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm²)	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd² (g/m²)	LAUNDRY	TYPICAL GARMENT APPLICATIONS
6241	4.5 oz Plain Weave	93% Nomex, 5% Kevlar, 2% Antistat	5.1 ATPV	Yes (27.3%)	X	4.5 (152)	 	Shirts, Lightweight Coveralls
6150	5.0 oz Plain Weave	93% Nomex, 5% Kevlar, 2% Antistat	5.2 ATPV	Yes (24.6%)	X	5.0 (170)	 	Shirts, Lightweight Coveralls
6261	6.0 oz Plain Weave	93% Nomex, 5% Kevlar, 2% Antistat	6.0 ATPV	Yes (21.0%)	X	6.0 (202)	 	Pant, Coverall, Jacket
6460	6.5 oz 2x1 Twill	93% Nomex, 5% Kevlar, 2% Antistat	6.8 ATPV	Yes (15.8%)	X	6.5 (220)	 	Pant, Coverall, Jacket
6170	7.5 oz Plain Weave	93% Nomex, 5% Kevlar, 2% Antistat	7.0 ATPV	Yes (11.8%)	X	7.5 (254)	 	Shell, Pant, Jacket

**Westex**  
**Indigo®**

Westex Indigo® is a superior line of FR denim fabrics that combines the look of everyday jeans wear with protective, comfortable and reliable industrial workwear.

**Westex Indigo® Fabrics**

STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm²)	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd² (g/m²)	LAUNDRY	TYPICAL GARMENT APPLICATIONS
0319	11.75 oz 2x1 Twill Denim	100% Cotton	17 ATPV	Yes (6.56%)	X	12.4 (420)	 	Jeans
0320	11.75 oz 3x1 Twill Stretch Denim	93% Cotton, 6% Polyester, 1% Spandex	17 ATPV	Yes (6.6%)	X	12.0 (406)	 	Jeans
0310	12.0 oz 3x1 Twill Denim Top Dye Sulfur	100% Cotton	19 ATPV	Yes (7.2%)	X	12.0 (406)	 	Jeans
0312	12.5 oz 3x1 Twill Stretch Denim	99% Cotton, 1% Spandex	17 ATPV	Yes (7.0%)	X	12.5 (424)	 	Jeans
0313	13.5 oz 3x1 Twill Denim	100% Cotton	19 ATPV	Yes (7.2%)	X	13.5 (458)	 	Jeans
0308	14.0 oz 3x1 Twill Denim	100% Cotton	22 ATPV	Yes (7.0%)	X	14.5 (492)	 	Jeans



Westex UltraSoft® has a strong reputation for providing an excellent balance of protection, comfort and value. Westex UltraSoft® was first introduced two decades ago and today is specified by name by thousands of end users globally.

Westex UltraSoft® Fabrics								
STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm <sup>2</sup> )	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd <sup>2</sup> (g/m <sup>2</sup> )	LAUNDRY	TYPICAL GARMENT APPLICATIONS
5568	6.5 oz 4x1 Twill	88% Cotton, 12% High Tenacity Nylon	9.5 ATPV	Yes (27.9%)	X	6.5 (220)		Shirts
0301	7.0 oz 3x1 Twill	88% Cotton, 12% High Tenacity Nylon	8.7 ATPV	Yes (21.9%)	X	7.7 (260)		Shirts, Lightweight Coveralls
5572	7.7 oz 3x1 Twill High-Vis	88% Cotton, 12% High Tenacity Nylon	9.2 ATPV	Yes (13.4%)	X	7.7 (260)		Shirts, Lightweight Coveralls
0451	9.0 oz 3x1 Rugged Twill	88% Cotton, 12% High Tenacity Nylon	12.4 ATPV	Yes (7.2%)	X	9.7 (330)		Pants, Jackets, Coveralls, Bib Overalls
0851	10.0 oz Sateen	88% Cotton, 12% High Tenacity Nylon	13.5 ATPV	Yes (6.6%)	X	10.3 (350)		Pants, Arc Flash Suits (0851 over 0851 = 45 ATPV)
0181	10.5 oz Rib Knit	86% Cotton, 12% High Tenacity Nylon, 2% Spandex	24.7 ATPV	Yes (trim)	X	11.0 (373)		Cuffs, Collars, Balaclavas
0180	11.0 oz Fleece	88% Cotton, 12% High Tenacity Nylon	21.8 Ebt	Yes (7.2%)	X	11.5 (390)		Sweatshirts, Hoodies
0961	11.0 oz Duck	88% Cotton, 12% High Tenacity Nylon	12.7 ATPV	Yes (7.4%)	X	11.0 (372)		Pants, Jackets, Bib Overalls



When comfort is the concern, Westex UltraSoft AC® is the top choice. A higher construction and yarns finer than those found in UltraSoft® fabric are combined with our proprietary advanced softening technology to make the Westex UltraSoft AC® fabric the softest fabric on the market.

Westex UltraSoft AC® Fabrics								
STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm <sup>2</sup> )	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd <sup>2</sup> (g/m <sup>2</sup> )	LAUNDRY	TYPICAL GARMENT APPLICATIONS
0901	7.0 oz 3x1 Twill	88% Long-Staple Cotton, 12% High Tenacity Nylon	8.3 ATPV	Yes (21.9%)	X	7.5 (254)		Shirts, Lightweight Coveralls



Westex UltraSoft® Flex FR fabric is designed to bend with your workers as they move in their jobs—giving them enhanced comfort and greater mobility while they work. Plus, they'll have the excellent softness, shrinkage control and guaranteed flame resistance that's only possible with Westex by Milliken's advanced, proprietary engineering process.

Westex UltraSoft® Flex Fabrics								
STYLE	DESCRIPTION	CONTENT	ARC RATING (cal/cm <sup>2</sup> )	NFPA® 2112 CERTIFIED (ASTM F1930 BODY BURN %)	CAN/CGSB 155.20	SPEC WEIGHT oz/yd <sup>2</sup> (g/m <sup>2</sup> )	LAUNDRY	TYPICAL GARMENT APPLICATIONS
0304	7.0 oz Twill	87% Cotton, 7% High Tenacity Nylon, 5% Polyester, 1% Spandex	8.7 ATPV	Yes (13.66%)	X	7.5 (254)		Shirts, Lightweight Coveralls

# Overview of Standards

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## **NFPA® 2112**

**Standard on flame-resistant clothing for protection of industrial personnel against short-duration thermal exposures from fire.**

Essential for manufacturers and certifying agencies, this standard protects workers from flash fire exposure and injury by specifying performance requirements and test methods for flame-resistant fabric and garments.

## **NFPA® 2113**

**Standard on selection, care, use, and maintenance of flame-resistant garments for protection of industrial personnel against short-duration thermal exposures from fire.**

Developed primarily for garment end users to reduce health and safety risks associated with incorrect selection, use, and maintenance, as well as contamination and damage of flame-resistant garments, this standard specifies selection, care, use, and maintenance requirements for such garments that are compliant with NFPA® 2112: Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire.

## **CAN/CGSB-155.20**

**Workwear for protection against hydrocarbon flash fire and optionally steam and hot fluids.**

This National Standard of Canada states the minimum requirements and test methods for performance of protective workwear worn for protection against unplanned exposure to hydrocarbon flash fire and optionally steam and hot fluids. This standard applies to newly manufactured (ie. unworn) protective workwear that individually, or as a component of an ensemble, covers the body from the neckline to the wrists and ankles and may cover the head and neck.

# Frequently Asked Questions

Laundering your FR PPE.

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## **Can I use fabric softener, dryer sheets or in-wash scent boosters?**

Do not use starches, fabric softeners, or any other laundry additives. Synthetic, heavy-duty liquid laundry detergents are recommended for washing. These products do a superior job of removing soils and are less likely than soap to form sticky deposits of lime soap curds, which are difficult to rinse out.

## **Can I wash with my regular non-FR clothes?**

FR garments should be sorted and washed separately to ensure that proper care is followed.

## **Can I use bleach?**

Do not use chlorine bleach.





Follow us for the latest FR insights.

PLEASE NOTE: AS EACH CUSTOMER'S USE OF OUR PRODUCT MAY BE DIFFERENT, INFORMATION WE PROVIDE, INCLUDING WITHOUT LIMITATION, TEST RESULTS, RECOMMENDATIONS, SAMPLES, CARE/LABELING/ PROCESSING INSTRUCTIONS OR MARKETING ADVICE, IS PROVIDED IN GOOD FAITH BUT WITHOUT WARRANTY AND WITHOUT ACCEPTING ANY RESPONSIBILITY/LIABILITY. ANY TEST RESULTS REPORTED ARE BASED ON STANDARD LABORATORY TESTING BUT SHOULD NOT BE USED TO PREDICT PERFORMANCE IN ACTUAL FIRE SITUATIONS. EACH CUSTOMER MUST TEST AND BE RESPONSIBLE FOR THEIR OWN SPECIFIC USE, FURTHER PROCESSING, LABELING, MARKETING, ETC. ALL SALES ARE EXCLUSIVELY SUBJECT TO OUR STANDARD TERMS OF SALE POSTED AT [www.milliken.com/terms](http://www.milliken.com/terms) (ALL ADDITIONAL/ DIFFERENT TERMS ARE REJECTED) UNLESS EXPLICITLY AGREED OTHERWISE IN A SIGNED WRITING. USE CAUTION NEAR SOURCES OF FLAME OR INTENSE HEAT, AND FOLLOW THE CARE INSTRUCTIONS - DO NOT LAUNDRY WITH BLEACH OR FABRIC SOFTENERS. ANY FR LIFETIME GUARANTEES ARE SUBJECT TO THE LIMITATIONS AND CONDITIONS IN THE FORGOING TERMS OF SALE AND CARE INSTRUCTIONS. Westex®, Indura®, UltraSoft®, UltraSoft AC®, TrueComfort®, Vinex®, Moda-Quilt®, Synergy®, Indigo®, AllOut®, InsulAir®, DH Air™ and CXP® are registered trademarks of Milliken & Company. Nomex® is a registered trademark of E. I. du Pont de Nemours and Company.

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