INDUSTRY GUIDE

OIL & GAS / ELECTRIC UTILITY / 70E



Bulwark[®]**FR**

THE BULWARK® ADVANTAGE

WORLD'S LARGEST MANUFACTURER OF FLAME-RESISTANT APPAREL
INDUSTRY LEADER IN FLAME-RESISTANT TECHNICAL EXPERTISE

LEADER IN FLAME-RESISTANT INNOVATION FOR 39 YEARS

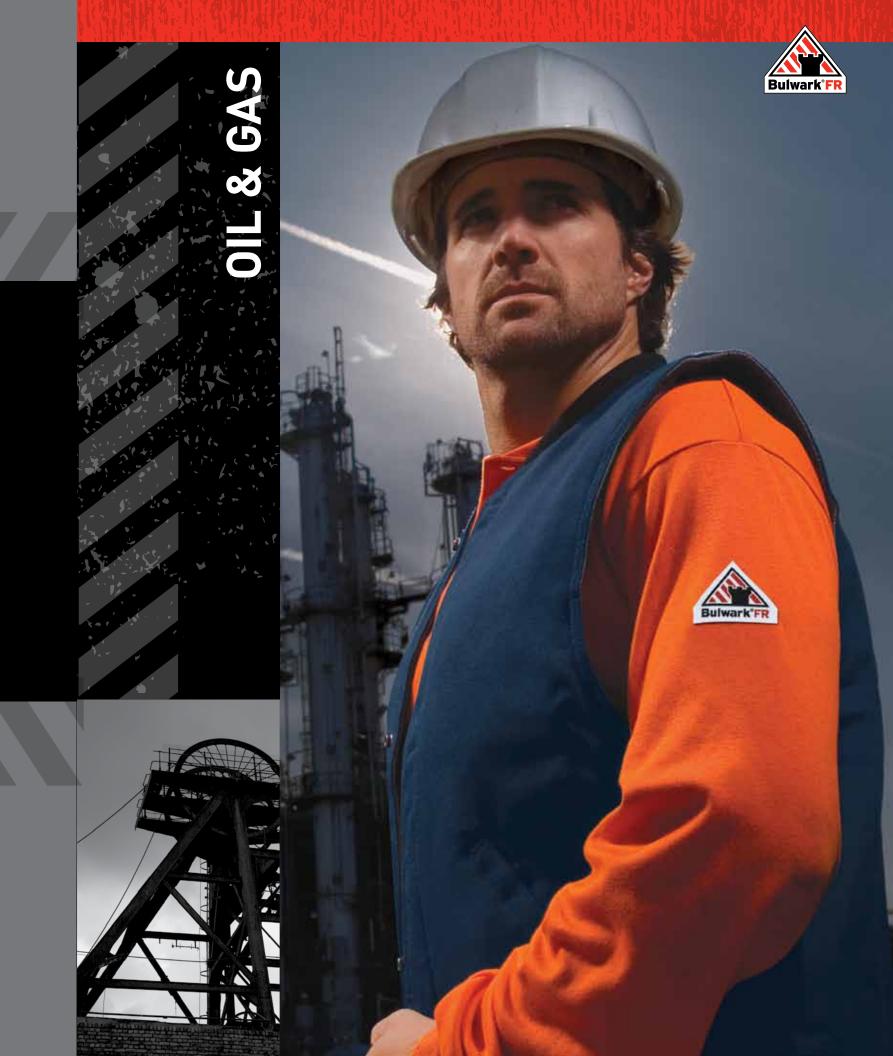
LARGEST VARIETY OF FABRICS, GARMENT STYLES AND COLORS

NEWLY CERTIFIED UL PRODUCTS

98.9% OF STOCK PRODUCT ORDERS FILLED WITHIN 48 HOURS

95% OF BULWARK PRODUCT IS INTERNALLY MANUFACTURED

WWW.BULWARK.COM // WWW.FACEBOOK.COM/BULWARKFR





WHAT PERFORMANCE STANDARDS DO GARMENT MANUFACTURERS USE?

have been established based on ASTM D6413 testing. D6413 is the standard US vertical flammability test method. Both the Canadian General Standards Board (CGSB) and the National Fire Protection Association (NFPA) require no more than 2.0 seconds Afterflame and 4.0 inches (100mm) Char Length for protection against hydrocarbon flash fires. In the absence of other specifications, Bulwark® follows ASTM F2302 requirements of no more than 2.0 seconds Afterflame and 6.0 inches Char Length as a minimum requirement. Other performance requirements may

Various specifications and performance requirements apply to specific garments and will be so indicated on the garment label.

> There is a lot of misinformation in the market. Many items are labeled "FR" that actually only meet general wearing apparel standards or standards that are only applicable to upholstery or curtains. Specifiers and end users must determine the appropriate PPE based on their hazard analysis and the standards and specifications applicable in their industry. PPE chosen must meet the requirements of the appropriate standards and specifications.

WHAT STANDARDS ARE USED FOR WORKERS EXPOSED TO FLASH FIRE HAZARDS?

The NFPA 2112 Standard on Flame-Resistant Garments for Protection of Industrial Personnel Against Flash Fire and its companion standard, NFPA 2113 on Selection, Care, Use, and Maintenance of these garments specify design, performance, certification requirements, and test methods for flame-resistant garments for use in areas at risk from flash fires. Third party certification of garments is also required.

- > In addition to third-party certifications of garments, flame resistance of each fabric layer is required to be tested as received and after 100 cycles of washing and drying and/or dry cleaning.
- > The Thermal Protective Performance (TPP) must be tested and a minimum TPP rating of 6.0 is required for "spaced" and 3.0 for "contact."
- > Finally, coveralls made to a standard pattern from candidate fabrics are tested for overall flash fire exposure on an instrumented manneguin in accordance with ASTM Test Method F1930. The exposure heat flux is 84 kW/m² (2.02 cal/cm²/sec) with an exposure time of 3.0 seconds. The average total predicted body burn must not exceed 50%.

NFPA 2113 provides guidance in the selection and specification of flame-resistant garments, including workplace hazard assessment. Other sections cover use and care and maintenance recommendations.

Canadian General Standards Board (CGSB) CAN/CGSB 155.20, Workwear for Protection Against Hydrocarbon Flash Fire is the Canadian flash fire standard.

The Canadian standard requires that flame resistance, heat resistance and thermal shrinkage be tested and that the garment label be in both English & French. For single layer garments, the TPP values for both spaced and contact tests must be reported on the garment label.



6 OZ. DELUXE COVERALL (W) 🔐 (III)









PROTECTION > Arc Rating ATPV 8.7 calories/cm²

Two angled chest pockets

6 oz. 88% Cotton/12% Nylon

- Pocket flaps conceal zip closures
- Concealed Nomex® two-way brass zipper
- Side vent openings with snap closure
- Deep-pleated action back

MEN'S	SIZE (reg)	SIZE (long)
CLD4	38-58	42-58



LONG SLEEVE TAGLESS T-SHIRT



FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton

PROTECTION > Arc Rating ATPV 9.6 calories/cm²

- FR rib knit collar
- Tagless

IEN'S	SIZE (reg)	
ET2	S-4XL	



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4.5 OZ. UNIFORM SHIRT (II) (II)











Aramid/5% Kevlar® Aramid/2% Other Fiber **PROTECTION** > Arc Rating ATPV 4.1 calories/cm²

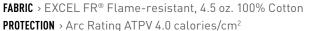
- Banded collar
- Double-needle topstitched placket
- Two pockets with button-down flaps

MEN'S		SIZE (reg)	SIZE (l	ong)	
SND2		S-3XL	M-2XL		
WOMEN	'S	SIZE (reg)			
SND3		S-3XL			
2GB	SND2NV	SND20R	SND2RB	SND2TN SND3TN	

FR BASE LAYER 🔐







- Self fabric collar
- Tagless

MEN'S	SIZE (reg)	
MPU2	S-5XL	
		MDII3I/II

PRE-WASHED DENIM DUNGAREE (4) 🧰 🍽 🕕









FABRIC > EXCEL FR® Flame-resistant, 14.75 oz. 100% Cotton Denim

PROTECTION > Arc Rating ATPV 20.7 calories/cm²

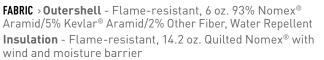
- Wraparound utility phone
- Concealed metal button closure
- Hammer loop

EN'S	SIZE	J.		
J8	28-50	4"		
DE IONW only	,		PEJ8DW	PEJ8SW









PROTECTION > Arc Rating E_{RT} 62.0 calories/cm²

- Rib knit storm cuffs for extra warmth
- Reflective trim

MEN'S	SIZE (reg)	SIZE (long)
JNPT	S-4XL	M-4XL



Stocked in Canada only



6 OZ. PREMIUM COVERALL WITH REFLECTIVE TRIM





FABRIC > Flame-resistant, 6 oz. 93% Nomex® Aramid/ 5% Kevlar® Aramid/2% Other Fiber

PROTECTION > Arc Rating ATPV 5.7 calories/cm²

- Mandarin-style, stand-up, two-way safety collar
- Tool pocket on the sleeve
- Two pockets with concealed snap flaps
- 360° FR yellow/silver/yellow reflective trim

MEN'S	SIZE (reg)	SIZE (short)	SIZE (long)
CNBTRB	38-60	38-48	40-60
CNBTRD	38-58	38-48	40-58



LONG SLEEVE TAGLESS T-SHIRT Recommendation





FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton

PROTECTION > Arc Rating ATPV 9.6 calories/cm²

- FR rib knit collar
- Tagless

SIZE (reg)
S-4XL



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CLASSIC COVERALL (W) (IS









FABRIC > Flame-resistant, 4.5 oz. 93% Nomex® Aramid/ 5% Kevlar® Aramid/2% Other Fiber

PROTECTION > Arc Rating ATPV 4.1 calories/cm²

- Topstitched, lay-flat collar
- Concealed Nomex® two-way brass zipper
- Bartack pencil stall

MEN'S	SIZE (reg)	SIZE (long)	
CNC2	38-58	42-52	



FR BASE LAYER 🔐

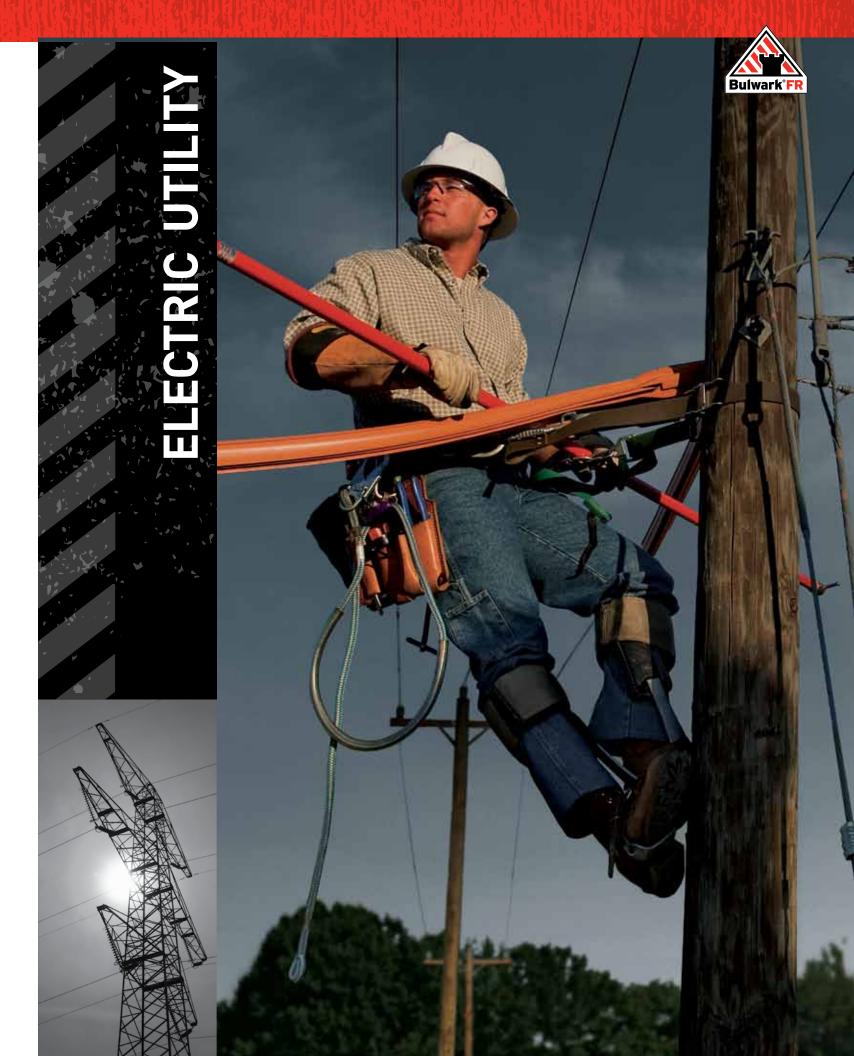




- Self fabric collar
- Tagless

MEN'S	SIZE (reg)	
MPU2	S-5XL	
		MBHOKH







WHAT PERFORMANCE STANDARDS DO GARMENT MANUFACTURERS USE?

have been established based on ASTM D6413 testing. D6413 is the standard US vertical flammability test method. Both the Canadian General Standards Board (CGSB) and the National Fire Protection Association (NFPA) require no more than 2.0 seconds Afterflame and 4.0 inches (100mm) Char Length for protection against hydrocarbon flash fires. In the absence of other specifications, Bulwark® follows ASTM F2302 requirements of no more than 2.0 seconds Afterflame and 6.0 inches Char Length as a minimum requirement. Other performance requirements may

Various specifications and performance requirements apply to specific garments and will be so indicated on the garment label.

> There is a lot of misinformation in the market Many items are labeled "FR" that actually only meet general wearing apparel standards or standards that are only applicable to upholstery or curtains. Specifiers and end users must determine the appropriate PPE based on their hazard analysis and the standards and specifications applicable in their industry. PPE chosen must meet the requirements of the appropriate standards and specifications.

WHAT STANDARDS ARE USED FOR ELECTRIC POWER GENERATION, TRANSMISSION AND DISTRIBUTION?

OSHA's Final Rule on Electrical Protective Equipment (OSHA 1910.269) prohibits clothing that when exposed to flames or arcs, could increase the extent of wearer injury. Employers must determine appropriate clothing based on an evaluation of potential hazards in the work environment. Clothing made from flame-resistant materials is acceptable under the Rule; ie., clothing that meets the requirements of ASTM F1506. Untreated cotton or wool fabrics weighing at least 11.0 oz. are also acceptable under limited conditions identified by OSHA.

The National Electrical Safety Code (NESC®) is published by the IEEE. It sets the ground rules for practical safeguarding of persons during the installation, operation, or maintenance of electric supply and communication lines and associated equipment.

The NESC® requires that the employer determine potential exposure to an electric arc for employees who work on or near energized parts or equipment. If the exposure is greater than 2 cal/cm², employees are required to wear clothing with an arc rating not less than the anticipated level of arc energy as determined by tables in the standard or by choosing clothing with a minimum effective arc rating of 4 cal/cm². Certain meltable fabrics are not allowed.



PLAID DRESS SHIRT 🔐





FABRIC > EXCEL FR® Flame-resistant, 7 oz. 100% Cotton **PROTECTION** > Arc Rating ATPV 7.7 calories/cm²

- Banded collar with button-down feature
- Single pocket with button

MEN'S	SIZE (reg)	SIZE (long)
SEG2	S-3XL	M-2XL
WOMEN'S	SIZE (reg)	

Women's delivery 4-6 weeks



FR BASE LAYER 🔐





FABRIC > EXCEL FR® Flame-resistant, 4.5 oz. 100% Cotton **PROTECTION** > Arc Rating ATPV 4.0 calories/cm²

- Self fabric collar
- Tagless

EN'S	SIZE (reg)
PU2	S-5XL









FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 11.5 oz. 88% Cotton/12% Nylon, Water Repellent PROTECTION > Arc Rating ATPV 14.6 calories/cm²

- New wraparound utility pockets
- Triple-needle outseams and seatseams for added durability
- Double-turned hem on finished sizes
- Metal closure concealed on back side so no metal thru-and-thru to keep the wearer protected
- Hammer loop
- Rule pocket

MEN'S	SIZE
PLJ8	28-50



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BROWN DUCK HOODED JACKET 🛗 া 🗓







- Three-piece hood with FR drawstring
- Soft brushed liner for warmth and comfort
- Large kangaroo-style pockets
- Lanyard access on back accommodates safety harness

MEN'S	SIZE (reg)	SIZE (long)
JLH4	S-4XL	L-2XL







FABRIC > EXCEL FR® Flame-resistant, 7 oz. 100% Cotton **PROTECTION** > Arc Rating ATPV 7.7 calories/cm²

- Banded collar with button down feature
- Single pocket with button

MEN'S	SIZE (reg)	SIZE (long)
SEG2	S-3XL	M-2XL

WOMEN'S	SIZE (reg)
SEG3	S-3XL



Women's delivery 4-6 weeks









FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 11.5 oz. 88% Cotton/12% Nylon, Water Repellent PROTECTION > Arc Rating ATPV 14.6 calories/cm²

- New wraparound utility pockets
- Triple-needle outseams and seatseams for added durability
- Double-turned hem on finished sizes
- Metal closure concealed on back side so no metal thru-and-thru to keep the wearer protected
- Hammer loop
- Rule pocket

MEN'S	SIZE	
PLJ8	28-50	







ZIPPER FRONT SWEATSHIRT 🔐





FABRIC > Navy & Orange: EXCEL FR® Flame-resistant, 13 oz. 100% Cotton Brushed Fleece

PROTECTION > Arc Rating ATPV 18.0 calories/cm²

FABRIC > Grey: EXCEL FR® Flame-resistant, 13 oz. 94% Cotton/6% Polyester Brushed Fleece

PROTECTION > Arc Rating ATPV 20.0 calories/cm²

- Single-layer hood fits over or under hard hats
- Split front, kangaroo pouch pockets
- Flame-resistant pull strings with lock cords to keep hood cinched in place

MEN'S	SIZE (reg)	SIZE (long)	
SEH6	S-5XL	M-5XL	
			 -

LONG SLEEVE TAGLESS HENLEY SHIRT 🔐





FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton **PROTECTION** > Arc Rating ATPV 9.6 calories/cm²

- Tagless
- FR rib knit collar and cuff
- Dyed-to-match buttons
- Cover stitched hem
- Spade shaped chest pocket

MEN'S	SIZE (reg)	SIZE (long)			
SEL2	S-4XL	L-2XL			
			SEL2KH	SEL2GY	SEL2NV

DUNGAREE W ...







FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 11.5 oz. 88% Cotton/12% Nylon, Water Repellent **PROTECTION** > Arc Rating ATPV 14.6 calories/cm²

- New wraparound utility pockets
- Triple-needle outseams and seatseams for added durability
- Double-turned hem on finished sizes
- Metal closure concealed on back side so no metal thru-and-thru to keep the wearer protected
- Hammer loop
- Rule pocket

MEN'S	SIZE		
PLJ8	28-50		7
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LONG SLEEVE TAGLESS HENLEY SHIRT 🛗 🐠







PROTECTION > Arc Rating ATPV 9.6 calories/cm²

- Tagless
- FR rib knit collar and cuff
- Dyed-to-match buttons
- Cover stitched hem
- Spade-shaped chest pocket

MEN'S	S SIZE	(reg) S	SIZE (long)	
SEL2	S-4X		-2XL	
	7			
L2KH	SEL2GY	SEL2NV	SEL20R	

LOOSE FIT STONE-WASHED DENIM JEAN 🛗 🕮 🕕









PROTECTION > Arc Rating ATPV 20.7 calories/cm²

- Stone-wash fabric with soft pre-washed comfort and look
- Loose seat and thigh to offer more room for mobility
- Wider leg opening than traditional fits to fit nicely over work boots

MEN'S	SIZE	423
PEJ6	28-50	





BROWN DUCK LINEMAN'S COAT 🔐 🐠 🕕





FABRIC > Outershell - EXCEL FR® ComforTouch® Flame-resistant, 11.5 oz. Duck, 88% Cotton/12% Nylon, Water Repellent

Liner - Flame-resistant, 6.5 oz. 70% Nomex®/30% Lenzing FR® **PROTECTION** > Arc Rating ATPV 46.3 calories/cm²

• Four large, deep external patch pockets

- Inside chest pocket
- Deep-pleated action back
- Lanyard access on back accommodates safety harness
- Accommodates snap-on hood HLH2BD for extra warmth against the elements

EN'S	SIZE (reg)	SIZE (long)	
C4	S-3XL	L-2XL	





LONG SLEEVE TAGLESS HENLEY SHIRT 🔬 🖤



FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton **PROTECTION** > Arc Rating ATPV 9.6 calories/cm²

- Tagless
- FR rib knit collar and cuff
- Dyed-to-match buttons
- Cover stitched hem
- Spade-shaped chest pocket

MEN'S	SIZE (reg)	SIZE (long)
SEL2	S-4XL	L-2XL





LOOSE FIT STONE-WASHED DENIM JEAN (III) (III)







FABRIC > EXCEL FR® Flame-resistant, 14.75 oz. 100% pre-washed Cotton Denim

PROTECTION > Arc Rating ATPV 20.7 calories/cm²

- Stone-wash fabric with soft pre-washed comfort and look
- Loose seat and thigh to offer more room for mobility
- Wider leg opening than traditional fits to fit nicely over work boots

MEN'S	SIZE	4250
PEJ6	28-50	
		DE LIGHT

PEJ6SW

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6 OZ. UNIFORM SHIRT 🔐 🕕







PROTECTION > Arc Rating ATPV 8.7 calories/cm²

- Single-needle topstitched placket
- Two pockets with button-down flaps
- Full sideseam gusset

HI-VISIBILITY

MEN'S	SIZE (reg)	SIZE (long)
SLU8	M-3XL =	L-2XL











FABRIC > Flame-resistant, 5.75 oz. Hi-Visibilty 95% Modacrylic/5% Aramid

PROTECTION > Arc Rating ATPV 5.5 calories/cm²

Flame-resistant ANSI 107-2004 & ANSI 107-2010 Class 2 Level 2 Compliant

- 360° visibility with front and back Flame resistant 2" reflective tape
- Hook and loop suppression tabs
- Hook and loop adjustable sides for dual sizing

MEN'S	SIZE	
VMV2	S/M, L/XL, 2XL/3XL	_









FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 9 oz. Twill, 88% Cotton/12% Nylon

PROTECTION > Arc Rating ATPV 12.2 calories/cm²

- Inner-lined waistband
- Slack-style front pockets

SIZE

 Mid-rise sits slightly below natural waist for comfort; Slim seat and thigh with tapered leg for a classic fit

PLW2	28-50	
WOMEN'S	SIZE	
PI W3	4-74	











WHAT ARE THE GARMENT PERFORMANCE REQUIREMENTS FOR WORKERS **EXPOSED TO ELECTRIC ARCS?**

The ASTM F1506 Specification for Flame-Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electrical Arc and Related Thermal Hazards covers performance properties of textile materials to be used for wearing apparel by electrical workers exposed to electric arcs. These materials must meet the following performance requirements:

- > A general requirement that thread, findings, and closures used in garment construction not contribute to the severity of wearer injuries in the event of an electric arc exposure.
- > A set of minimum performance specifications for knit and woven fabrics.
- > The fabric must not melt, drip, or have more than 2.0 seconds Afterflame or 6.0 inches Char Length when tested as received and after 25 launderings or dry cleanings. Testing for flame resistance is in accordance with ASTM Test Method D6413.
- > The fabric may not have more than 5.0 seconds Afterflame time when tested as received in accordance with ASTM Test Method F1959. The arc rating is reported as either: arc rating ATPV or arc rating E_{RT} (if the ATPV cannot be calculated because of fabric breakopen). The arc rating is reported as guidance on the performance of the fabric in arc exposure testing. There is no minimum required value for arc rating.

Garments conforming to the requirements of F1506 must be labeled with a tracking code, a statement that the garments meets the requirements of F1506, the manufacturer's name, size information, care instructions and fiber content, and the arc rating (ATPV) or (E_{pr}) . When garments are made with a different number of fabric layers in different areas; e.g., double layer front panels, the arc rating for each area must be designated. Pockets, trim, closures, seams, etc. are not considered extra layers.

Women's delivery 4-6 weeks

MEN'S



WHAT PERFORMANCE STANDARDS DO GARMENT MANUFACTURERS USE?

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the garment label.

There is a lot of misinformation in the market. Many items are labeled "FR" that actually only meet general wearing apparel standards or standards that are only applicable to upholstery or curtains. Specifiers and end users must determine the appropriate PPE based on their hazard analysis and the standards and specifications applicable in their industry. PPE chosen must meet the requirements of the appropriate standards and specifications.

WHAT ARE THE ELECTRICAL SAFETY REQUIRMENTS FOR THE WORKPLACE?

National Fire Protection Association (NFPA) Standard 70E, Standard for Electrical Safety in the Workplace addresses electrical safety requirements for activities such as operation, repair or demolition of exposed energized electrical conductors or circuit parts. Virtually all aspects of workplace electrical safety, recognizing hazards associated with the use of electrical energy, and taking precautions so that hazards do not cause injury or death are included.

A significant change was made in 2009 that total system arc rating of layered ensembles must be determined by a multilayer arc test on the combination of all the layers assembled as they would be worn, rather than adding the arc ratings of the individual layers. The standard allows nonmelting, flammable fiber garments to be used as undergarments for added protection, but if PPE is selected using Tables 130.7(C)(9) and 130.7(C)(10) in the standard, all layers used to determine the total system arc rating must be flame-resistant.

Under NFPA 70E employers must document and implement an overall electrical safety program that includes a hazard risk evaluation and job briefing procedures. This program must be audited annually. If energized electrical conductor or circuit parts operating at 50 volts or more are not placed in an electrically safe work condition, written authorization by work permit is required. Employees must be qualified to do the work and trained to understand the specific hazards and potential injury associated with electrical energy. Employees exposed to shock hazards must be retrained annually in cardiopulmonary resuscitation.

Employers must conduct both shock and flash hazard analysis to establish a flash protection boundary. When work will be performed within the arc flash protection boundary, the employer must document the incident energy exposure in calories per square centimeter. Arc rated clothing conforming to the requirements of ASTM F1506 and appropriate PPE must be worn either based on the incident energy determined for the specific task or by using NFPA 70E Table 130(C) (9) to determine the hazard/risk category.

Canadian Standards Association Standard Z462-08, Workplace Electrical Safety is the Canadian standard for electrical workplace safety. Garments meeting the requirements of NFPA 70E also meet the requirements specified in CSA Z462-08, Section 4.3.7. Z462 PPE requirements are currently essentially identical to the 2009 Edition of NFPA 70E. Future plans are to modify Z462 for Canadian requirements.



COOL TOUCH® 2 DRESS UNIFORM SHIRT (18) All (18)







FABRIC > Khaki & Light Blue: Flame-resistant, 7 oz. 48% Modacrylic / 37% Lyocell / 15% Para-Aramid

PROTECTION > Arc Rating ATPV 8.4 calories/cm²

FABRIC > Navy: Flame-resistant, 7 oz. 45% Modacrylic / 35% Lyocell / 15% Polyamide Imide / 5% Para-Aramid

PROTECTION > Arc Rating ATPV 10.1 calories/cm²

- Banded collar
- Double-needle topstitched placket
- Superior abrasion resistance
- Moisture management
- Two pockets with button-down flaps
- Full sideseam gusset

MEN'S	SIZE (reg)	SIZE (long)				
SMU2	S-3XL	M-2XL	_			
WOMEN'S	SIZE (reg)					
SMU3	S-3XL					
Women's deliv	ery 4-6 weeks		SMU2KH SMU3KHB	SMU2LB SMU3LBB	SMU2NV SMU3NVB	

COOL TOUCH® 2 CARGO POCKET PANT (II) A (III)



FABRIC > Flame-resistant, 7 oz. 45% Modacrylic/ 35% Lyocell/ 15% Polyamide Imide/5% Para-Aramid

PROTECTION > Arc Rating ATPV 10.1 calories/cm²

- Inner-lined waistband
- Closure is a concealed hook-and-eye
- Sideseam wraparound utility pocket
- Mid-rise sits slightly below natural waist for comfort; Slim seat and thigh with tapered leg for a classic fit.

MEN'S	SIZE	
PMU2	28-50	
NOMEN'S	SIZE	
PMU3	4-24	
Nomen's deliv	ery 4-6 weeks	PMU2NV

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6 OZ. UNIFORM SHIRT 🔐 🐠 🕕







PROTECTION > Arc Rating ATPV 8.7 calories/cm²

- Single-needle topstitched placket
- Two pockets with button-down flaps
- Full sideseam gusset

MEN'S	SIZE (reg)	SIZE (long)
SLU8	M-3XL	L-2XL







FABRIC > EXCEL FR® Flame-resistant, 4.5 oz. 100% Cotton PROTECTION > Arc Rating ATPV 4.0 calories/cm²

- Self fabric collar
- Tagless

MEN'S	SIZE (reg)	
MPU2	S-5XL	
		MPII2KH











FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 9 oz. Twill, 88% Cotton/12% Nylon

PROTECTION > Arc Rating ATPV 12.2 calories/cm²

- Inner-lined waistband
- Slack style front pockets
- Mid-rise sits slightly below natural waist for comfort;
 Slim seat and thigh with tapered leg for a classic fit

PLW3KHB

MEN'S	SIZE	
PLW2	28-50	
WOMEN'S	SIZE	
PIW3	4-74	_





LAB COAT 🔐 🖤 🗓





FABRIC > EXCEL FR® Flame-resistant, 7 oz. 100% Cotton **PROTECTION** > Arc Rating ATPV 7.7 calories/cm²

- Side vent openings to reach garment on inside of lab coat
- Long coat hits at the thigh

MEN'S	SIZE (reg)	
KEL2	S-2XL	







FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton

PROTECTION > Arc Rating ATPV 9.6 calories/cm²

- FR rib knit collar
- Tagless

EN'S	SIZE (reg)	
ET2	S-4XL	
		CETOCA

WORK PANT (W) ARROW (II)

MEN'S









PROTECTION > Arc Rating ATPV 12.2 calories/cm²

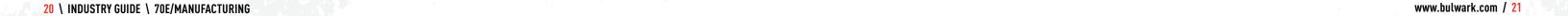
- · Inner-lined waistband
- Slack style front pockets
- Mid-rise sits slightly below natural waist for comfort; Slim seat and thigh with tapered leg for a classic fit

PLW2	28-50
WOMEN'S	SIZE
PLW3	4-24

Women's delivery 4-6 weeks

SIZE





6 OZ. DRESS UNIFORM SHIRT 🛍 🕪 🕕









PROTECTION > Arc Rating ATPV 6.5 calories/cm²

- Banded button-down collar
- Single-needle topstitched placket
- Two pockets with button-down flaps

MEN'S	SIZE (reg)	SIZE (long)
SLU6	M-3XL	L-2XL







LONG SLEEVE TAGLESS T-SHIRT 🗰 🐠





FABRIC > EXCEL FR® Flame-resistant, 6.25 oz. Interlock FR, 100% Cotton

PROTECTION > Arc Rating ATPV 9.6 calories/cm²

- FR rib knit collar
- Tagless

MEN'S	SIZE (reg)	
SET2	S-4XL	
		SFT2GY











FABRIC > EXCEL FR® ComforTouch® Flame-resistant, 9 oz. Twill, 88% Cotton/12% Nylon

PROTECTION > Arc Rating ATPV 12.2 calories/cm²

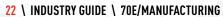
- Inner-lined waistband
- Slack style front pockets
- Mid-rise sits slightly below natural waist for comfort; Slim seat and thigh with tapered leg for a classic fit

	0.22	
PLW2	28-50	
WOMEN'S	S17F	









Bulwark® garments are designed for continuous wear. They meet the flame resistance requirements specified in ASTM International Standard F2302-08 for labeling protective clothing as heat and flame-resistant. They also meet the performance requirements of National Fire Protection Association (NFPA) Standard 70E, Electrical Safety Requirements for Employee Workplaces, 2009 Edition, ASTM Standard F1506-08, Flame-Resistant Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards. Because these fabrics are flame-resistant, they are acceptable under the Occupational Safety & Health Administration (OSHA) Final Rule 1910.269, Final Rule on Electrical Protective Equipment. For complete information on these products, as well as laundering instructions, please visit bulwark.com.

Arc Ratings: Arc ratings are supplied to Bulwark based on testing by our fabric suppliers or from our own testing. Arc ratings are a statistical calculation of the 50% probability that a second degree burn will result from an electric arc exposure. As with all tests, some level of variation in ATPV test results is normal and expected among fabrics of identical fiber content and nominal weight. In order to assist end users with their hazard analysis by providing the most conservative ATPV, Bulwark will publish the lowest arc rating for that fabric weight in our catalog and on our garment label.

Product images shown here are photomechanically reproduced. As a result, colors may vary from actual fabric samples.

