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# Standard vs. Test Methods

Often users mix up the many standards and test methods related to FR garments. We will go through the most relevant standard performance specification, test methods, terms and give you a summary of what you should really be looking for when considering FR garments.

# ASTM F2733-09

This is a Standard Performance Specification for Flame Resistant Rainwear for Protection Against Flame Hazards. Requirements: must meet requirements under Testing Methods ASTM D6413 and ISO 17493 and ASTM F1930.

# CGSB 155.10

This is a Standard Performance Specification for Firefighter's protective clothing for protection against heat and flame. This standard is specific to firefighter clothing, and has no relevance for any other industry. It is commonly, and incorrectly, used to reference a fabric's resistance to ignition and self-extinguish when exposed to an open flame.

# CGSB 155.20-2000

This is a Standard Performance Specification outlining the minimum requirements for performance workwear worn for protection against unplanned exposure to hydrocarbon flash fire. Testing includes flame resistance (fabrics tested before and after 50 domestic wash/dry cycles), thermal protective performance (TPP), heat resistance, and thermal shrinkage resistance.

# What does it mean to meet CGSB 155.20-2000?

The CGSB 155.20-2000 standard refers to protective workwear that will be worn as the outermost garment (please note the wording "workwear" and "garment", as this standard relates to a completed garment, not just its components). This standard is the most abused; many manufacturers will claim partial compliance with statements like: (1) Meets CGSB 155.20 Par 6.1.1 (referencing only the single paragraph 6.1.1 of the standard which is related to Flame Ignition and Self-Extinguish-the actual garment is non-compliant, but the outer fabric has a basic flame retardant treatment); (2) Shell material meets CGSB 155.20 (referencing only that the outer fabric meets paragraphs 6.1.1. through 6.1.2.2 of the standard which is related to the Flame Ignition, Self-Extinguish, and Thermal Protective Properties (TPP) of the shell fabric-the actual garment is non-compliant as the Standard requires all Components, including liners, visibility trim (tape), reinforcements, wristlets, and collar meet Flame and Heat Resistance requirements both in original state and after 50 cycles of washing; all threads must be inherently flame resistant, and all insulation must be Flame and Heat Resistant. Using reference portions to this standard, or unique paragraphs of this standards is misleading and deceptive to the consumer, who will assume the garment is protective against hydrocarbon flash fire occurrence.

## What about PVC or PU product?

Garments made of PVC or PU polymers films cannot meet CSGB 155.20 as it will not pass the ISO 17493 convective heat requirement due to their low melting points of 160°C, and 240°C respectively.

## CGSB 155.22-2014

This is the Standard Performance Specification outlining the minimum requirements for performance of fireline workwear worn for protection against the adverse effects to the firefighter's body during forest firefighting. Testing includes flame resistance (fabrics tested before and after 50 domestic wash/dry cycles), thermal protective performance (TPP), heat resistance, thermal shrinkage resistance, and seam strength.

## NFPA 2112-2012

This is the Standard Performance Specification that will specify the minimum performance requirements and test methods for flame-resistant fabrics and components, and the design and certification requirements for garments for use in areas at risk of flash fires. Testing includes flame resistance (fabrics tested before and after 100 commercial wash/dry cycles), thermal protective performance (TPP), heat resistance, thermal shrinkage, and manikin flash fire.

#### NFPA 1975-2014

This is the Standard Performance Specification outlining requirements for the design, performance, testing, and certification of non-primary protective station/work uniforms and the individual garments comprising station/work uniforms. This standard will also specify requirements for the thermal stability and flame resistance of textiles used in the construction of station/work uniforms.

## NFPA 1977-2016

This is a Standard Performance Specification specifying the minimum design, performance, testing, and certification requirements for protective clothing, helmets, gloves, and footwear that are designed to protect firefighters adverse environmental effects during wildland fire-fighting operations.

## ASTM F1506-15

This is a Standard Performance Specification for Textile Material for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards, as per Section 130.7 (C)(8) of NFPA 70E. Testing includes electric arc exposure, flame resistance (fabrics tested before and after 25 commercial wash/dry cycles), tear resistance, breaking strength, dimensional change in laundering, colourfastness to laundering/dry cleaning, and yarn slippage.

An FR designated garment refers to the fabric's treated or inherent ability to resist ignition or to self-extinguish.

Hydro carbon flash protection; CGSB 155.20-2000 compliance tests vertical flame as well as thermal protective performance (TPP VALUE) A minimum level 6 (at 3 second) is required to meet this standard, and all materials used on the garment including the threads must be FR.



- Fully compliant with CSA Z96-15 Class 2, Level 2
- Fully compliant with ANS/ISEA 107-2015 Type R, Class 2, ASTM D6413 (FR)
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- · Strong breathable FR-treated premium polyester material
- 2" Vi-brance® reflective tape in WCB/Worksafe configuration
- · 5-point hook-and-loop tear away safety design
- · Safety D-ring access slot on back
- · Extra strong edging tape
- 2 Chest, and 2 front storage pockets
- · Machine washable
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

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# **Open Road® Surveyor FR Vest**

- Fully compliant with CSA Z96-15 Class 1, Level 2
- Fully compliant with ANS/ISEA 107-2015 Type O, Class 1, ASTM D6413 (FR)
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- 2" Vi-brance® reflective material in 4" contrasting tape meets WCB/Worksafe/DOT configuration
- · 100% Cotton FR-treated fabric for comfort and durability
- · Built to last heavy-duty brass snaps and grommets
- · Mesh side vents
- · Dual reflective chest straps
- · Cell/Radio pocket with hook-and-loop fastener
- · Safety D-ring slot access on back
- · 14" zippered pack across entire back area
- 8 pockets with hook-and-loop fastener (5 outside; 3 inside)
- · Brass grommets on lower front pockets for surveyor tape dispenser
- · Long ruler slot pocket on left back
- · This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks



6136FR



6165FR





# FLAME RESISTANT GARMENTS

# For Current Pricing and Availability Call 1-800-561-3600 or email info@bapequipment.com

# Viking Handyman<sup>®</sup> FR Suit

- Fully compliant with CSA Z96-15 Class 1, Level FR
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- 100% Waterproof and windproof
- Ideal for Fish/Food processing as sandwich fabric will not delaminate with exposure to animal or fish oil
- 0.35mm FR-treated PVC/polyester/PVC material
- Sandwich construction proves good splash protection and chemical resistance
- 2" Yellow prism reflective tape
- Generous sizing for comfort and freedom of movement
- · Micro welded seams for durability and waterproofness
- ESR nylon snap closure systems
- Sold as a 3-piece suit
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

#### Jacket

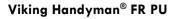
- Cotton corduroy collar for comfort
- Detachable hood included
- · Adjustable wrist cuffs
- Underarm vents for breathability

#### **Bib Pants**

- · Bib pants with adjustable waist panel and ESR suspenders
- · Adjustable boot cuffs







- Fully compliant with CSA Z96-15 Class 2, Level 2
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- 100% Waterproof and windproof
- Stretchable FR-treated PU/Polyester fabric lightweight and flexible in sub-zero conditions
- 2" Yellow Reflexite™ prism reflective tape
- Micro welded seams
- · Resistant to motor oil, diesel, chemicals, animal fats, and fish oils
- ESR nylon snap closure systems
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

#### Jacket

- Fully compliant with ANSI/ISEA 107-2015 Type R, Class 3, ASTM D6413 (FR)
- Large detachable hood to cover hard hat
- Outer storm flap over zipper
- Adjustable wrist cuffs
- Underarm vents for breathability

## **Bib Pants**

- Fully compliant with ANSI/ISEA 107-2015 Class E, ASTM D6413 (FR)
- · Bib pants with adjustable waist panel and ESR suspenders
- Adjustable boot cuffs





6050FRJ

Size S - 4XL



# Viking Handyman<sup>®</sup> FR PU

- Fully compliant with CSA Z96-15 Class 2 Level 2
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- 100% Waterproof and windproof
- Stretchable FR-treated PU/polyester fabric lightweight and flexible in sub-zero conditions
- 2" 3M Scotchlite reflective material in 4" WCB/Worksafe/DOT configuration
- Micro welded seams
- · Resistant to motor oil, diesel, chemicals, animal fat, and fish oil
- ESR nylon snap closure systems
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

#### Jacket

- Fully compliant with ANSI/ISEA 107-2015 Type R, Class 3, ASTM D6413 (FR)
- · Large detachable hood to cover hard hat
- · Adjustable wrist cuffs
- Underarm vent for breathability
- 2 Durable intergrated front pockets
- Outer storm flap over front zipper

#### **Bib Pants & Waist Pants**

- Fully compliant with ANSI/ISEA 107-2015 Class E, ASTM D6413 (FR)
- · Adjustable boot cuffs
- · Bib pants with adjustable waist panel and ESR suspenders
- · Waist pants have draw cord elasticized waist and pass through pockets

# 6055FRWPG available in





# Viking<sup>®</sup> FR Hoodie

- Fully compliant with CSA Z96-15 Class 1, Level 2
- Fully compliant with ANSI/ISEA 107-2015 Type O, Class 1, ASTM D6413 (FR)
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- Premium 400 gsm FR-treated cotton fleece lined hoodie keeps you warm and comfortable
- 2" Vi-brance® reflective material in 4" contrasting tape meets WCB/Worksafe/DOT configuration
- · Tear away detachable hood
- Warm full-size hood with drawstring adjustors
- · Dual reflective chest straps
- 2 Front storage pockets
- · Comfort snug elastic wrist and waistband
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

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3907FRH

Size S - 4XL

# Viking<sup>®</sup> Firewall FR<sup>®</sup> Hoodie

- Meets safety standards: PPE Category 2, CAN/CGSB 155.20-2000, CSA Z462-15, ASTM F1506, NFPA 70E-2015
- Fully compliant with CSA Z96-15 Class 1 Level 2 and ANSI/ISEA 107-2015 Type O, Class 1, FR
- High-performance 400 gsm FR-treated cotton provides durability, comfort and excellent dual hazard protection against hydrocarbon flash fire and arc flash, minimizing the risk of burns
- TPP Value: Contact 10.4, Spaced 12
- ARC rating ATPV: 19 cal/cm<sup>2</sup> CAT2 (HRC2)
- 2" Vi-brance<sup>®</sup> FR reflective material in 4" contrasting tape meets WCB/Worksafe/DOT configuration
- Dual reflective chest straps
- Tear-away detachable hood with drawstring adjustors
- Warm full size hood with drawstring adjustors
- Two front storage pocket
- Comfort snug elastic wrist and waistband

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3995FR

64H122200

U.S. availability: S - 5XL Size S - 6XL





# Viking Professional<sup>®</sup> Journeyman 300D Trilobal Rip-stop FR Surveyor Vest

- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- Heavy-duty FR-treated 300 denier Trilobal rip-stop polyester with PU backing gives superior abrasion, puncture, rip and snag resistance
- 2" Vi-brance<sup>®</sup> reflective material in 4" contrasting tape meets WCB/Worksafe/DOT configuration
- 4 Outer large storage pockets with hook-and-loop fasteners, multi pen/marker/chalk and small ruler pocket, 11" large ruler slot pocket, and 14" zippered pack across entire back area
- Dual chest straps
- · Safety D-ring access slot on back
- Cell/radio pouch pocket
- 4 inner storage pockets
- Mesh side vents for breathability
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

## 3995FR

- Fully compliant with CSA Z96-015 Class 1, Level 2
- Fully compliant with ANSI/ISEA 107-2015 Type O, Class 1, ASTM D6413 (FR)

3995FRO

- Fully compliant with CSA Z96-15 Class 2, Level 2
- Fully compliant with ANSI/ISEA 107-2015 Type R, Class 2, ASTM D6413 (FR)

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# For Current Pricing and Availability Call 1-800-561-3600 or email info@bapequipment.com



## Viking Professional<sup>®</sup> Insulated Journeyman 300D Trilobal Rip-stop FR

- Fully compliant with CSA Z96-15 Class 1, Level 2
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- Heavy-duty FR-treated 300 denier Trilobal rip-stop polyester with PU backing gives superior abrasion, puncture, rip and snag resistance
- 2" Vi-brance<sup>®</sup> reflective material in 4" contrasting tape meets WCB/Worksafe/DOT configuration
- 125 gsm ThermoMAXX<sup>®</sup> Insulation good up to -30°C / -22°F
- FR-treated inner lining
- Waterproof and windproof
- This garment is not intended as protection from Hydrocarbon Flash Fires,
- Electric Arc Hazards, or welding sparks

## Jacket

- Fully compliant with ANSI/ISEA 107-2015 Type O, Class 1, ASTM D6413 (FR)
- Insulated Stormblaster® hood reduces wind and rain exposure up the back of the jacket, while orienting the front close to the chin and cheek area. It has a safety tear away design, making it easy to remove and attach.
  Heavy-duty zipper with storm flap for weather protection
- neavy-duty zipper with storm f
  Dual reflective chest straps
- Double stitched tape and background for superior durability
- 14" embroidery zipper included
- Front and back vents for extra breathability
- 2 Large zippered pockets on the outside, and 1 inner chest pocket
- · Adjustable wrist with hook-and-loop fastener to seal out rain and wind

# **Bib Pants**

- Fully compliant with ANSI/ISEA 107-2015 Class E, ASTM D6413 (FR)
- Heavy-duty elastic suspenders with quick release buckles
- Elasticized waist with zippered fly and hook-and-loop flap
- 13" Boot zippers with cover and hook-and-loop fasteners for easy access
- Detachable bib design
- Insulated upper bib
   30°C
   22°F
   COMBLATE
   Confessional
   Confessional
   Confessional
   Confessional
   Confessional
   Confessional



3907FRWP



3907FRWJ

Size S-4XL

# For Current Pricing and Availability Call 1-800-561-3600 or email info@bapequipment.com

## Viking Professional<sup>®</sup> Freezer Insulated Journeyman **300D Trilobal Rip-Stop FR**

- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame • Heavy-duty FR-treated 300 denier Trilobal rip-stop polyester with PU backing
- gives superior abrasion, puncture, rip and snag resistance 2" Vi-brance® reflective material in 4" contrasting tape meets
- WCB/Worksafe/DOT configuration
- 250 gsm ThermoMAXX® Insulation good up to -50°C / -60°F
- FR-treated inner lining
- Waterproof and windproof
- This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

#### Parka

- 3957FRJ is fully compliant with CSA Z96-15 Class 1, Level 2 and ANSI/ISEA 107-2015 Type O, Class 1, ASTM D6413 (FR
- and ANSI/ISEA 107-2015 Type 0, Class 1, ASTM D0413 (FR) 3957FRJO is fully compliant with CSA 296-15 Class 2, Level 2 and ANSI/ISEA 107-2015 Type R, Class 3, ASTM D6413 (FR) Insulated Stormblaster<sup>®</sup> hood reduces wind and rain exposure up the back of the jacket, while orienting the front close to the chin and cheek area. It has a safety tear away design, making it easy to remove and attach. Warm and comfortable fleece collar
- #10 heavy-duty tooth zipper with storm flap for weather protection
- Dual reflective chest straps
- Double stitched tape and background for superior durability
- 14" embroidery zipper included Adjustable waist drawstring toggle for windproof
- 2 Large storage pockets with hook-and-loop flap closure, and 1 inner chest pocket
- · Adjustable wrist with hook-and-loop fasteners and double cuff to seal out rain and wind • Insulated 34" long parka for added warmth

#### Overalls

- 3957FRP is fully compliant with CSA Z96-15 Class 1, Level 2 and ANSI/ISEA 107-2015 Class E, ASTM D6413 (FR)
  3957FRPO is fully compliant with CSA Z96-15 Class 2, Level 2 and ANSI/ISEA 107-2015 Class E, ASTM D6413 (FR)

- Heavy-duty elastic suspenders with quick release buckle
- Insulated front and back upper bib
- Inner zippered pocket and front storage pocket on bib
   18" heavy duty boot zipper with 7" internal kick panel
   2 Side waist gussets for wind guard
- Zippered fly and hook-and-loop flap

- Ultra thin Thermo 2 Front slash pockets Insulation • 1 side cargo pocket lessional rilobal i-brance olyester

Size S - 4XL

# Viking<sup>®</sup> Miner 49er Mining Suit

- Fully compliant with CSA Z96-15 Class 1, Level FR
- Tested in accordance with test method CAN/CGSB-4.2 No.27.10 & ASTM D6413 flame resistance, self-extinguishing for momentary contact with open flame
- Fully compliant with WCB Standard PPE2 High Visibility Garment Type 2
- 100% Waterproof and windproof
- · Heavy-duty neoprene with nylon, PU backing
- Suitable for long wearing industrial applications and abrasive environments
- · Resistant to acids, chemicals, oils, and solvents
- 30% concentration Sodium Cyanide resistant >480 minutes
- · Heat and flame incidental contact protection
- Excellent puncture, tear and abrasion resistance
- · Generous sizing for working ease
- · Seams are heat-sealed and taped
- 2" Vi-brance® reflective tape strategically placed front and back
- · This garment is not intended as protection from Hydrocarbon Flash Fires, Electric Arc Hazards, or welding sparks

## Jacket

- Durable nickel plated brass buttons
- · D-ring slot on back (also provides venting)
- · Hood (5212) sold separately

#### **Bib Pants**

- · Heavy-duty elastic suspenders
- · Double bib design with inner zippered pocket and pen holder









3957FRP

3957FRPO





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