



SF Vest[®]

FLAME RETARDANT





NFPA®

2112-2023

*Standard on Flame-Resistant Clothing for
Protection of Industrial Personnel
Against Short-Duration Thermal
Exposures from Fire*



EN ISO 11612:2015
A1 A2 B1 C1 E1 F1



IEC 61482-2:2018
APC-1



EN ISO 11611:2015
Class 1-A1&A2



EN 1149



CAN/CGSB
155.20-2017



ASTM 1506



ASTM
D6413



NFPA 2112:2023

Chapter 1 Design Requirements

1.1 Garments, Shrouds/Hoods/Balaclavas,Gloves,and Barrier Face Coverings.

1.1.1 Hardware Finishes. All flame-resistant hardware finishes shall be free of rough spots, burrs, or sharp edges.

1.1.2 Metal Components. Any metallic closure systems or metal components shall not come in direct contact with the body.

1.1.3 Slide Fastener Tape Requirements, All slide fastener tape shall be made of an inherently flame-resistant fiber.

1.2 Use of a Liner for Cold Weather Insulation. Garments shall be permitted to include liners in their construction including cold weather insulation materials where the liner is either integral to the garment or removable.

1.2.1* Where garments incorporate a cold weather insulation material as part of a removable lining system, the garment shall be designed such that the removable liner consisting of the cold weather insulation material cannot be independently worn.

1.3 Venting Materials.

1.3.1 Venting materials used on flame-resistant garments shall be covered by fabric meeting the requirements of this standard.

1.3.1.1 Where used on flame-resistant garments and not covered by fabric, venting materials shall not exceed 465 cm(72 in.) over the entire flame-resistant garment.

1.4 Barrier Face Coverings.Barrier face coverings shall meet the requirements of ASTM F3502,Standard Specification for Barrier Face Coverings, with the exception of the labeling requirements in Section 10.

Chapter 2 Labeling and Information

2.1 Product Label Requirements.

2.1.1* All flame-resistant clothing shall have a product label or labels permanently and conspicuously attached to each flame-resistant garment, shroud/hood/balaclava, glove, and barrierface covering.

2.1.2 At least one product label shall be conspicuously locatedinside each flame-resistant garment, shroud/hood/ balaclava.and glove.

2.1.3 Multiple label pieces shall be permitted in order to carry all statements and information required to be on the product label.

2.1.4* The certification organization's label, symbol, or identifying mark shall be permanently attached to the product label or shall be part of the product label.

2.1.5 All worded portions of the required label or productlabel shall be printed in English, Supplementary languages, inaddition to English, shall be permitted.

2.1.6 Symbols and other pictorial graphic representations shall be permitted to be used to supplement worded statements on the label or product label.

2.1.7 Graphic representations shall be consistent to clearly communicate the intended message.

2.1.8 The following statement shall be printed legibly on the product label in letters at least 2.5 mm (0.10 in.) high:

THIS CLOTHING ITEM MEETS THE REQUIREMENTS OF
NFPA 2112-2023.

2.1.9 The following information shall also be printed legibly on the product label for each flame-resistant garment, shroud/hood /balaclava, and glove in letters at least 1.6 mm (0.063 in.)high:

- (1) Model name, number, or design
- (2) Manufacturer's name, identification, or designation
- (3) Manufacturer's address
- (4) Country of manufacture
- (5) Manufacturer's garment identification number, lot number, or serial number
- (6) Size
- (7) Fiber content for each primary fabric layer including cold weather insulation materials but excluding interlinings and labels
- (8) The words "DO NOT REMOVE"
- (9) The words "NFPA 2113 REQUIRES UPPER AND LOWER BODY COVERAGE"

2.1.9.1* At a minimum, the following information shall also be printed legibly on the product label for each flame-resistant barrier face covering in letters at least 1.6 mm(0.063 in.) high:

- (1) Model name, number, or design
- (2) Manufacturer's name, identification, or designation
- (3) Manufacturer's garment identification number, lot number, or serial number
- (4) "DO NOT REMOVE"

2.1.10 The product label shall also include the international symbol for "Read user instructions before use," as shown in Figure 2.1.10.

2.1.11 The manufacturer shall be permitted to exclude the international symbol for "Read user instructions before use," as described in 2.1.10, when all of the information specified in 2.2.1 is provided on the product label or other labels adjacent to the product label.

2.1.12 Garments, shrouds/hoods/balaclavas, or gloves with multiple layers, including an outer layer and removable cold weather insulation material layer, shall specify the certified configuration and include a warning on the label stating that all layers must be properly secured and worn in accordance with the manufacturer's instructions.

2.1.13 For garments, shrouds/hoods/balaclavas, or gloves with multiple layers that include an outer layer and a removable cold weather insulation layer, a label shall be conspicuously attached to the removable insulation layer that states "DO NOT WEAR THIS LINER BY ITSELF, FOR COMPLIANCE WITH THE REQUIREMENTS OF NFPA 2112, THE COMPLETE CLOTHING ITEM MUST BE WORN. FOR COMPLIANCE INFORMATION, SEE THE PRODUCT LABEL ON THE OUTER CLOTHING ITEM."

2.2 User Information.

2.2.1* The manufacturer shall provide with each clothing item, at a minimum, the following instructions and information:

- (1) Pre-use information
 - (a) Safety considerations
 - (b) Limitations of use
 - (c) Marking recommendations and restrictions
 - (d) Warranty information
- (2) Preparation for use
 - (a) Sizing/adjustment
 - (b) Recommended storage practices
- (3) Inspection frequency and details
- (4) Donning and doffing procedures
- (5) Proper use consistent with NFPA 2113
- (6) Maintenance and cleaning
 - (a) Cleaning instructions and precautions
 - (b) Maintenance criteria and methods of repair where applicable
- (7) Retirement and disposal criteria



FIGURE 2.1.10 "Read User Instructions Before Use" Symbol.

2.2.2* Manufacturers shall provide a sizing chart that indicates the range of key wearer measurements that are accommodated by each specific size of garment, shroud/hood/balaclava, glove, or rainwear.



**FR REGULAR COLOR SHORT
SLEEVE CREW NECK T-shirt**
SFFRC01

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



**FR SHORT SLEEVE CREW
NECK T-SHIRT**
SFFRC02

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- Segmented Retroreflective Silver Heat Transfer (CSR-4003FR-Z)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



**FR LONG SLEEVE CREW
NECK T-SHIRT
SFFRC03**

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- Segmented Retroreflective Silver Heat Transfer (CSR-4003FR-Z)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



**FR LONG SLEEVE CREW
NECK T-SHIRT
SFFRC04**

Describe

- 7 OZ 100% Cotton Interlock(M-C100K07)
- Segmented Retroreflective Silver Heat Transfer CSR-4003FR-Z
- 20LFR Plastic Button
- 100% Meta-AramidFR heat label
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK





FR HOODIE LONG SLEEVE T-SHIRT SFFRC05

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR REGULAR COLOR SWEATSHIRT SFFRC06

Describe

- 12 OZ 100% Cotton Interlock(KTC10012)
- 12 OZ 95% Cotton/5% Elastane (KTC10012R)
- No. 5 Metal FR Zipper
- Retroreflective Sliver(CSR 5002-B)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR HOODIE SWEATSHIRT SFFRC07

Describe

- 12 OZ 100% Cotton Interlock(KTC10012)
- Retroreflective Sliver(CSR 5002-B)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR REGULAR COLOR SWEATSHIRT SFFRC08

Describe

- 12 OZ 100% Cotton Interlock (KTC10012)
- No. 5 Metal FR Zipper
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK





FRONT SIDE BACK

FR REGULAR COLOR REFLECTIVE COVERALL SFFRC09

Describe

- 7.7 OZ Twill 99% Cotton/1% Antistatic (Cotton FR Fabric)
- CSR-5001 Retroreflective Silver
- No. 8 Metal FR Zipper
- No. 5 Metal FR Zipper
- 24L FR Plastic Button
- 5 OZ 100% Cotton (C10005 Pocket)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FR COVERALL SFFRC10

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5002-A
- No. 8 Metal FR Zipper
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT SIDE BACK



FR REGULAR COLOR REFLECTIVE COVERALL SFFRC11

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- No. 8 Plastic FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FR CROSS BACK COVERALL SFFRC12

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- Retroreflective Sliver(CSR 5002-B)
- No. 8 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides





FR BASIC STYLE SHIRT SFFRC13

Describe

- 7 OZ Twill 100% Cotton (C10007)
- CSR-5001-B Retroreflective Silver
- 20L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR ORANGE BASIC STYLE SHIRT SFFRC14

Describe

- 7 OZ Ripstop 88% Cotton/12% Nylon (CN881207RIPSTOP)
- CSR-5001-B Retroreflective Silver
- 20L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK





FR REGULAR COLOR SHIRT SFFRC15

Describe

- 7 OZ Twill 88% Cotton/12% Nylon (CN881207)
- 20L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR REFLECTIVE SHIRT SFFRC16

Describe

- 7 OZ Twill 100% Cotton (C10007)
- CSR-5001 Retroreflective Silver
- 20L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK





FR SUIT SFFRC17

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 5 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT SIDE BACK



FR PANT SFFRC18

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 3 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT SIDE BACK



FR SUIT SFFRC19

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 5 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR PANT SFFRC20

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 3 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK





FR SUIT SFFRC21

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 8 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR PANT SFFRC22

Describe

- 9.0 OZ Twill 88% Cotton/12% Nylon (CN881209)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 5 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR SUIT SFFRC23

Describe

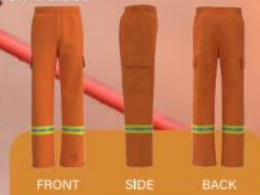
- 10.5 Twill 98% Cotton/2% Spandex (CS980210.5)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 8 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FR PANT SFFRC24

Describe

- 10.5 Twill 98% Cotton/2% Spandex (CS980210.5)
- 5 OZ 100% Cotton (C10005 Pocket)
- CSR-5001 Retroreflective Silver
- No. 5 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FR PANT SFFRC25

Describe

- 13.0 OZ Twill 100% Cotton Denim
- CSR-5001-B Retroreflective Silver
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides





FR JACKET SFFRC26

Describe

- 10 OZ Canvas 87% Cotton/12 Nylon/1% Spandex
- (CN88210S)
- No. 5 Metal FR Zipper
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FR BIB SFFRC27

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR BIB SFFRC28

Describe

- 6 OZ 100% Cotton Interlock(KTC10006)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polythylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR BIB SFFRC29

Describe

- 12 OZ 100% Cotton Interlock(KTC10012)
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT



SIDE



BACK



FR VEST SFFRC30

Describe

- 7 OZ Twill 100% Cotton(C10007)
- CSR-5001 Retroreflective Silver
- No. 5 Plastic FR Zipper
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK



FR REGULAR COLOR VEST SFFRC31

Describe

- 10 OZ Canvas 87% Cotton/12 Nylon/1%
- Spandex(CN88210S)
- No. 5 Metal FR Zipper
- No. 3 Metal FR Zipper
- 24L FR Plastic Button
- 100% Meta-Aramid
- 100% Dacron, Sewn to Shell Textile at Top, on 2 Siders or on 4 Sides
- 100% Polyethylene, Printed to Dupont Label and Sewn to Shell Textile on 4 Sides



FRONT

SIDE

BACK

Outer Shell Fabrics:

STYLE DESIGNATION	NOMINAL WEIGHT (OZND)	MATERIAL COMPOSITION	WEAVE/ KNIT	FINISH	
C10007	7.0	100% Cotton	Twill	FR	9.3 cal
C10009	9.0	100% Cotton	Satin	FR	11 cal
C10013D	13.0	100% Cotton Denim	Twill	FR	15 cal
C10015	15.0	100% Cotton Denim	Twill	FR	24 cal
CN881207	7.0	88% Cotton/ 12% Nylon	Twill	FR	11 cal
CN881207PRIPSTOP	7.0	88% Cotton/ 12% Nylon	Ripstop	FR	-
CN881209	9.0	88% Cotton/ 12% Nylon	Twill	FR	13 cal
Cotton FR Fabric	7.7	99% Cotton/ 1% Antistatic	Twill	FR	-
KTC10006	6.0	100% Cotton	Interlock	FR	12 cal
KTC10012	12.0	100% Cotton	Single Side Fleece	FR	18 cal
M-C100K07	7.0	100% Cotton	Interlock	FR	12 cal
CN881210S	10	87% Cotton/ 12% Nylon/ 1% Spandex	Canvas	FR	14 cal
CN861202	7	86% Cotton/ 12% Nylon/ 2% Anti-static	Twill	FR	12 cal
CS980210.5	10.5	98% Cotton/ 2% Spandex	Twill	FR	14.5 cal

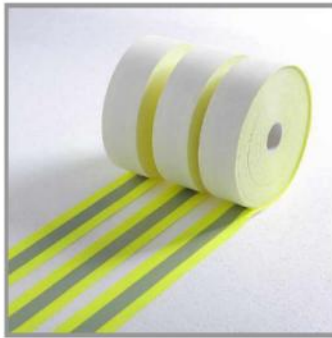
Other Textile Materials:

Style Designation	Nominal Weight (oz/yd)	Material Composition	Weave/ Knit	Finish	
C10005 Pocket	5.0	100% Cotton	Plain	FR	< 4 cal
KTC10012R	12.0	95% Cotton/5% Elastane	Rib knit	FR	-

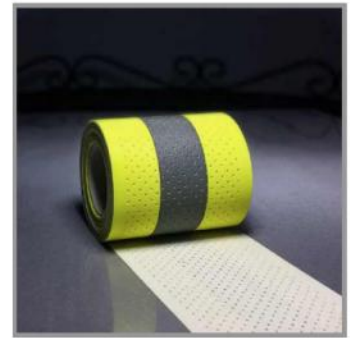


REFLECTIVE MATERIAL

Cotton fluorescent yellow flame retardant warning tape



Cotton yellow silver yellow punched flame retardant reflective fabric



Aramid fluorescent yellow flame retardant warning tape



Bright silver all cotton flame-retardant reflective cloth



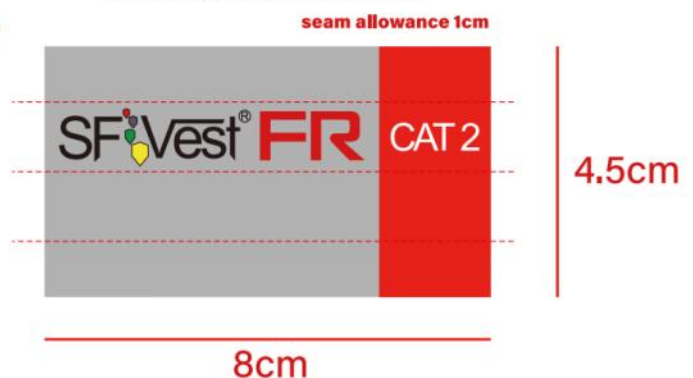
Aramid silver flame-retardant reflective cloth



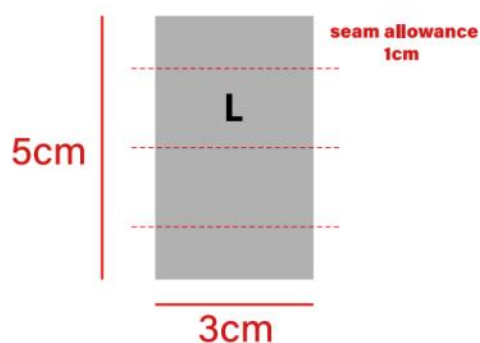
Collar label woven label regular material



Pocket clip label woven label flame retardant material



Small size label woven label regular material



Sleeve label woven label flame retardant material





Leading label

seam allowance 1cm

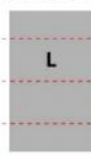
2.5cm



10cm

Size label

(leaving outer dimensions)



seam allowance 1cm

5cm

3cm

Clamp label

(leaving outer dimensions)

seam allowance 1cm



4.5cm

8cm

Flame retardant label



6.35cm

7cm

NFPA 70 E (ASTM F1506)

NFPA 2112

HAZARD	ARC FLASH • Dangerous release of energy created by an electrical fault (very short duration – fraction of a second) • Can reach 35,000°F (19,400°C) – four times hotter than the surface of the sun	FLASH FIRE • A sudden and intense fire that is caused when a mixture of air and a flammable substance combine to ignite • Extremely high heat, short duration (typically less than 3 seconds), and a rapidly moving flame
HOW IT OCCURS	• High current source with a conductive object can cause electricity to flash over • Dropping a tool or otherwise creating a spark can ignite an arc flash in area around a conductor • Equipment failure • Breaks or gaps in insulation • Dust, corrosion, or other impurities on the surface of the conductor	IGNITION OF A COMBUSTIBLE ATMOSPHERE FLASH FIRES NEED THREE THINGS TO OCCUR: 1. Oxygen 2. Ignition Source 3. Fuel Flash fire conditions worsened in confined spaces
CAN PRODUCE	• Thermal Radiation • Intense Light • Acoustical Energy • Pressure Wave • Debris	• Very intense, fast moving flame • Pressure waves (in closed environments) • Ignition of surrounding area contents
INDUSTRIES AFFECTED	ELECTRICAL; UTILITY • Installation, Repair & Maintenance of Electrical Systems	PETROCHEMICAL; OIL & GAS • Any operations around flammable gases, volatile liquids, or particulate
KEY TESTS	• ASTM D7138 (thread melting resistance): Thread used in garments must be of flame-resistant fiber and not melt at 500oF • ASTM D6413 (vertical flame resistance): When exposed to flame for 12 seconds, garment fabrics must: >> Self-extinguish (after flame) in 2 seconds or less >> Exhibit damage (char length) of 6 inches or less >> No melting or dripping can occur >> Fabric must meet these standards after 25 wash and dry cycles • ASTM F1959 – Arc Testing: determines how much heat a certain fabric will block from an electric arc BEFORE the onset of second degree burns for the wearer (ATPV or EBT values reported in cal/cm2)	• ASTM D7138 (thread melting resistance): Thread used in garments must be of flame-resistant fiber and not melt at 500oF • ASTM D6413 (vertical flame resistance): When exposed to flame for 12 seconds, garment fabrics must: >> Self-extinguish (after flame) in 2 seconds or less >> Exhibit damage (char length) of 4 inches or less >> No melting or dripping can occur >> Fabric must meet these standards after 100 industrial laundering cycles • ASTM F2894 (heat resistance): When exposed to 500oF for 5 minutes, garment fabrics must: >> Not ignite, melt, drip, or separate >> Not shrink more than 10% • ASTM F2700 (heat transfer performance): When exposed to combined convective and radiant heat at 2.0 cal/cm2/sec, garment fabrics must have a HTP rating of 3.0 cal/cm2 or greater (contact) and 6.0 cal/cm2 or greater (spaced) • ASTM F1930 (instrument manikin test): under simulated flash fire condition, predicted 2nd and 3rd degree total body injury is no more than 50% of total body surface area covered by sensors (less head, hands, and feet) • Label Print Durability Test – garment labels must remain legible and in place after 100 industrial laundering cycles

CONFORMITY ASSESSMENT ON FOLLOWING PAGE >>>

NFPA 70 E (ASTM F1506)

NFPA 2112

CONFORMITY ASSESSMENT DEMONSTRATION OF COMPLIANCE

SELF-DECLARATION BY GARMENT MANUFACTURER

Garments must have label that states compliance with ASTM F1506 and the following information:

- Manufacturer name
- Identification of fabric
- Garment tracking number or identification code
- Garment size
- Care instructions
- Arc-rating (ATPV or EBT)

Manufacturer must provide information demonstrating compliance upon request of purchaser

INDEPENDENT THIRD PARTY CERTIFICATION

Certification organization must be accredited to ISO 17065
Testing must be performed by laboratories accredited to ISO 17025 under supervision of certification organization.

Manufacturers required to have quality assurance program.

Manufacturers subject to audits at least once a year.

Garments must meet all requirements of standard or use materials or components already recognized by certification organization.

Garment labels must have specific compliance statement and the following information:

- Product name, number or design
- Manufacturer name, address, country of manufacture
- Garment identification number, lot number, or serial number
- Garment size
- Fiber content

Manufacturer must provide user information within information on garment use, care, maintenance, and limitations.

Certification organization must provide updated listing for compliant products.



COMPANY ADDRESS

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