

# **Personal Protective Equipment**

## **Technical Specification**

**Scope**

Yes | No

The purpose of the clothing is to provide protection during structural fire fighting operations where there is a threat of fire or when certain physical hazards are likely to be encountered, such as during non-fire-related rescue operations, emergency medical operations, and victim extrication.

**Standard**

Yes | No

All garments produced shall meet or exceed the criteria set forth in the current edition of NFPA 1971 STANDARD ON PROTECTIVE ENSEMBLES FOR STRUCTURAL FIRE FIGHTING AND PROXIMITY FIRE FIGHTING, FED-OSHA CFR 1910, Subpart L, OSHA 29 CFR Part 1910.1030 and/or the requirements of CAL-OSHA title 8, Article 10.1, Para. 3406.

All components and composites used in the construction of garments shall be third party tested, certified and listed for compliance to NFPA 1971. The label of the third party tester shall denote certification.

The manufacturer shall be registered to the ISO Standard 9001 to assure a satisfactory level of quality.

**USER GUIDE INFORMATION**

Yes | No

Each garment shall include instructions on how to access the User Information Guide with information required by NFPA 1971.

This guide shall include:

- (a) Pre-use information:
  - Safety considerations.
  - Limitations of use.
  - Garment marking recommendations and restrictions.
  - A statement that most performance properties of the garment cannot be tested by the user in the field.
  - Warranty information.
- (b) Preparation for use:
  - Sizing/adjustment.
  - Recommended storage practices
- (c) Inspection:
  - Inspection frequency and details.
- (d) Don/Doff:
  - Donning and doffing procedures.
  - Sizing and adjustment procedures.
  - Interface issues.
- (e) Use:
  - Proper use consistent with NFPA 1500, Standard on Fire Department, Occupational Safety and Health Program, and 29 CFR 1910, 132.
- (f) Maintenance and Cleaning:
  - Cleaning instructions and precautions with a statement advising users not to use garments that are not thoroughly cleaned and dried.
  - Inspection details.
  - Maintenance criteria and methods of repair where applicable.
  - Decontamination procedures for both chemical and biological contamination.
- (g) Retirement and Disposal
  - Retirement and disposal criteria and considerations.

(h) Drag Rescue Device (DRD)

- Use, inspection, maintenance, cleaning and retirement of the DRD.

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### Tracking Label System

Yes | No

There shall be a PDF417, two dimensional bar code label permanently affixed to each garment for tracking purposes. The bar code shall contain a minimum of the following information:

- unique serial number
- item description (brand, model, material color)
- lot information (date of mfg., size, etc.)
- material description
- the standard to which the garment is compliant

The bar code shall be able to withstand customary wash and wear cycles. The PDF417 bar code must incorporate a minimum of a 30% "error correction" capability.

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### Sizes

Yes | No

Coats shall be made available in even chest sizes with corresponding sleeve lengths available in short, regular, and long. Pant sizes shall be made available in even waist sizes with inseam lengths available in extra short, short, regular and long. Male and female sizing available.

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### Warranty

Yes | No

Each garment shall have a limited lifetime warranty against defects in material and workmanship. See Appendix for additional information.

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### Composite Performance

Yes | No

The garment composite, consisting of the outer shell, moisture barrier and thermal liner, shall provide a Thermal Protective Performance (TPP) of not less than 42 when tested in accordance with NFPA 1971 standard.

The garment composite, consisting of the outer shell, moisture barrier and thermal liner, shall provide a Total Heat Loss (THL) of not less than 250 when tested in accordance with NFPA 1971 standard.

The Heat Transfer Index rating shall be 25 seconds for the shoulder when measured at 2 psi (pounds per square inch) and 25 seconds for the knee when measured at 8 psi.

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### Stress Points

Yes | No

All outer shell stress points, including top and bottom pocket corners, pocket flap corners, top and bottom of storm flap/fly shall be reinforced using a 42 stitch minimum bar tack.

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### Labeling

Yes | No

Each garment shall have a garment label(s) permanently and conspicuously attached stating at least the following language, as well as detailed warning instructions provided by the manufacturer.

**Do Not Remove This Label**

**THIS GARMENT MEETS THE GARMENT REQUIREMENTS OF NFPA 1971,  
STANDARD ON PROTECTIVE ENSEMBLE FOR STRUCTURAL FIRE FIGHTING,  
2018 EDITION**

**MADE IN THE U.S.A.**

## Packaging

Each Coat and Pant shall be packaged in a dark plastic bag in order to provide protection during shipping and prior to first use

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## Online Fire Academy

Online training shall be available meeting NFPA 1500 training requirements on the safe use of the (garments, helmet, boots, gloves, hood). This online training shall include:

- Personal Responsibility of the Individual Fire Fighter
- Purpose and Limitations
- Structural PPE Construction, Features, and Functions
- Routine Inspection
- Donning and Doffing
- Proper Fit and Overlap
- Using Your PPE Safely
- How Fire Fighting Affects the Body
- Routine Cleaning of PPE
- Assembly and Disassembly of PPE
- Storage
- Useful Life and Retirement of PPE

Additionally online training satisfying NFPA 1851 training requirements on advanced inspection, advanced cleaning and basic repairs (turnouts and helmets) shall be available.

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## Acquisition Regulation

In the past seven-year period has your firm, or any of its principals, been convicted or had a civil judgment rendered against it for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property?

**Meets Requirements?**

YES  NO

Detailed Description / Specification

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**Janesville® Super-Deluxe™ Coat**

**Coat Model / Design**

Yes | No

**COAT CONSTRUCTION:** The coat shell shall be of 3-panel construction in all layers with an inverted pleat on each side where back front and back body panel pieces meet. Each pleat shall begin at the back of each shoulder and shall extend vertically down the side of the coat. A combination moisture barrier/thermal shall include a corresponding 1" inward dynamic fold approximately 1.5" from each sleeve seam at the shoulder. This fold shall provide for coat expansion when extending arms forward and shall interface with the inverted pleats of the outer shell to maximize mobility and function of the outer shell and thermal liner. The coat shell and moisture barrier/thermal liner shall be oversized to assure proper chest fit and insure maximum mobility without restriction of the arms and shoulders. Bi-swing construction shall provide better fit, longer wear and greater comfort. Sleeves shall be of full length and of shoulder insert, 2-panel type design.

**BELLOWS UNDERARMS:** Bellows underarm construction shall be used in all layers of the coat-outer shell/moisture barrier/thermal liner-ensuring maximum upper body freedom of movement including complete arm mobility when reaching up and/or forward. Bellows construction shall extend to all inner layers of the coat making it possible for the fit and freedom of movement, derived from the outer shell bellows construction, to be passed through the inner layers to the wearer's body.

The outer shell/moisture barrier/thermal liner bellows shoulder construction shall consist of an underarm and shoulder bellows of elongated football shape not less than 8" wide by not less than 15" long sewn into each of the coats fabric layers by two-needle construction. The bellows in each layer shall begin at a point corresponding to the front of the armpit, wrap around under the arm and shoulder joint, and terminate at the rear top of the shoulder.

**FREEDOM ELBOW:** The sleeve shall have an insert throughout all layers that shall provide a natural bend in the sleeve. This insert shall be set in the back of each sleeve and shall be a shortened football shape, 6" wide in the middle and 3" wide at the seams.

**Coat Model / Design**

Yes | No

When measured at the center of the back from the collar seam to the hem bottom, the coat shall measure 32" or 35" long for male; 29" or 32" long for female.

**Drag Rescue Device**

Yes | No

The Fire Fighter Recovery Harness™ shall be constructed of a one and one-half inch wide KEVLAR® strap that shall be installed between the outer shell and the thermal liner. This harness shall have a hand loop (16" in circumference) that exits the outer shell through a 2" polymer coated aramid reinforced slot on the back of the coat just below the collar and is held in place by means of a piece of 1.5" x 2" hook on the strap and a piece of 1" x 2" loop attached to the outer shell. This strap is then secured under a 2.25" x 5.25" flap that is sewn in at the neck /collar area. Two pieces 1" x 2" loop shall be set vertically on shell to align with two pieces of 1" x 2" hook set vertically to the underside of the flap. The harness is also held in proper alignment by means of a 2" x 2" piece of loop placed on the inside of the outer shell underneath the chest trim that corresponds to a piece of 1.5"x 2" hook located on the harness. Two 1" x 3.5" self-fabric straps with 1" x 2" hook on one end and 1" x 2" loop on other end shall be set to coat in the shoulder cap area to keep straps in proper position for use. The loop handle shall have a silver retro-reflective LION logo patch.

Fire Fighter Recovery Harness™ provides mechanical leverage for dragging a downed and incapacitated structural firefighter from a life-threatening environment. The design of the harness enables the rescuer to drag the downed firefighter in line with the axis of the firefighter's skeletal frame, in order to decrease the risk of further injury.

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**Coat Outer Shell Material**

Yes | No

The outer shell shall be constructed of +/- 6.5 oz./sq. yd 65% Kevlar®/35% Nomex® twill weave with extremely durable FPPE water resistant Teflon® FPPE alloy.

**Fabric Color**

Yes | No

Color shall be khaki

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**Coat Liner & Moisture Barrier**

Yes | No

THERMAL LINER: Prism 65% Meta-Aramid/20% FR Viscose/11% Nylon/4% Para-Aramid face cloth (3.6 oz./sq. yd.) quilted to virgin 50% para-aramid/50% meta aramid batting weighing approximately 3.75 oz./sq. yd. (Total weight +/- 6.75 oz./sq. yd.)

MOISTURE BARRIER: CROSSTECH® BLACK (Type 2F): NOMEX® substrate laminated to a lightweight breathable, Teflon membrane; weighing 5.0 oz./sq. yd.

The liner shall have one 8.5" x 8.5" internal pocket which shall be made of black outer shell material. The liner pocket shall be located on the left side of coat liner.

Quilt Thermal Liner Construction: Quilt Thermal Liner Construction: The moisture barrier shall be completely sewn to the thermal liner at its perimeter with the breathable membrane oriented inward toward the thermal liner and away from the outer shell. All moisture barrier seams shall be sealed as required by NFPA 1971. The moisture barrier/thermal liner shall finish no more than 1" from the cuffs and 3" from the hem.

MOISTURE BARRIER/THERMAL LINER ATTACHMENT: Completely Removable: The moisture barrier/thermal liner shall be completely detachable from the outer shell for ease of cleaning by the use of hook and loop, zippers, and snaps. There shall be a zipper down each front facing, hook and loop along the neck to interface with collar as well as hook and loop and one snap at each sleeve end.

All moisture barrier seams shall be sealed as required by NFPA 1971.

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**Reflective Trim**

Yes | No

All trim shall be sewn with four rows lockstitch 301, minimum six stitches/inch for most secure trim attachment.

Ventilated Trim shall be of 3" Scotchlite II (triple trim) of red/orange perforated with 0.08 mm holes (114 per square inch) to provide a conduit for the release of vapor that can occur when moisture is heated and the trim compressed.

Coat trim shall be applied as follows: New York Pattern: One 3" strip shall be set full circumference at the bottom sweep of the outer shell; one 3" strip shall be set around each sleeve approximately 2" above the cuff; one 3" strip shall be set around each

sleeve just above the elbow; one 3" strip shall be set full circumference at the chest.

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**Hanger Loop**

Yes | No

An external hanger loop constructed of a double layer of outer shell material and reinforced with two 42-stitch bartacks shall be provided on the outside of the coat at the collar seam. It shall be designed to provide long service and shall not tear or separate from the coat when the coat is hung by the hanger loop, loaded evenly with a weight of 80 lbs. and allowed to hang for one minute.

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**Coat Inner Yoke Reinforcement**

Yes | No

A layer of Semper Dri™ (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to two layers of NOMEX®/Kevlar® spunlace (Total weight +/- 6.0-6.8 oz./sq. yd)) shall be positioned between the moisture barrier and thermal liner for extra thermal protection in a high heat and compression area of the coat. It shall be sewn to the inside of the upper back portion of the thermal liner across the upper back from the back shoulder and collar seams 7" down, over the tops of shoulders and down the front approximately 4" ending at the armhole.

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**Coat Shoulder Reinforcement**

Yes | No

A 4" wide area at the top of the shoulders extending 6" from the collar seam shall be capped with pearl gray split cowhide leather for abrasion resistance and thermal protection.

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**Coat Elbow Reinforcement**

Yes | No

The elbow shall be reinforced with grey split cowhide leather for abrasion resistance and thermal protection.

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**Coat Cuff Reinforcement**

Yes | No

The cuff of the sleeve shall be reinforced with a binding of pearl gray split cowhide leather not less than 3" in total width for abrasion resistance and thermal protection. At least 2" of the cuff reinforcement shall extend down the interior of the outer shell sleeve with a .75" wide strip of FR hook sewn full circumference to the topside of the cuff reinforcement. For added safety, (1) female snap fastener shall be set in the hook fastener to assist in attaching outer shell to moisture barrier/thermal liner

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**Coat Wristlets**

Yes | No

An internal wristlet shall consist of a 2-ply KEVLAR Spandex knitted not less than 8" extending completely over the palm with a thumbhole preventing the wristlet from sliding back. Wristlets shall be double stitched and bound to the moisture barrier/thermal liner providing extended thermal and slash protection

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**Coat Water Well - Ever-Dri**

Yes | No

A combination Semper Dri™ (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to two layers of NOMEX®/Kevlar® spunlace (Total weight +/- 6.0-6.8 oz./sq. yd)) and one layer of breathable CROSSTECH® Black (Type 2F) leader shall be sewn no more than 1" back from the combination liner sleeve end to form a sleeve well. One male snap and one .75"wide strip of FR loop shall be sewn full circumference to the end of the thermal liner/CROSSTECH® Black (Type 2F) moisture barrier leader to help secure the combination liner to the outer shell. This sleeve well shall prevent water and hazardous materials from entering the sleeve when arms are in a raised position.

The combination liner sleeve ends shall be inserted into the outer shell sleeve ends by means of lining up the male snaps then attaching the FR loop fastener of the combination liner sleeve end with the female snap and FR hook fastener of the outer shell cuff. This method of combination liner attachment shall prevent any gaps from occurring between the combination liner and sleeve well during a full range of motion. The combination liner shall extend to within 1" of the sleeve end.

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**Coat Closure System**

Yes | No

**THERMAL FRONT PANEL CONSTRUCTION:** There shall be continuous thermal and moisture protection around the entire torso including the storm flap. To ensure this protection, as well as reduce potential for wicking moisture to inside of liner, both right and left inside front facings of the coat outer shell shall incorporate outer shell fabric and Gore RT7100™ PTFE moisture barrier, extending from collar to hem.

**COAT FRONT CLOSURE DESIGN:** The complete outer shell coat front closure design shall consist of a FRONT CLOSURE SYSTEM completely protected by an OUTSIDE STORM FLAP which shall have its own, independent STORM FLAP CLOSURE SYSTEM.

**STORM FLAP:** A storm flap measuring not less than 3" wide, nor less than 22" in length shall be set on the outside of the right side of the coat opening for maximum thermal protection and clear drainage. The inner lining of the storm flap shall be Gore RT7100 PTFE moisture barrier meeting all requirements for moisture barriers sandwiched between two layers of outer shell fabric.

**FRONT/STORM FLAP CLOSURES:** The front closure shall consist of a thermoplastic zipper such that fast closure and exit is possible yet the coat remains securely closed while working. The storm flap closure shall consist of double-stitched 1.5" wide FR hook and loop attachments with FR hook fastener sewn on the left front of the coat, and corresponding FR loop fastener sewn on the inner side of the outer storm flap. The hook and loop closure shall extend the full length of the outer storm flap eliminating all exposed frontal hardware. The front closure shall consist of 1.5" hook and loop attachments which shall be sewn into the coat overlap, along the leading edge of the left and right sides of the coat.

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**Coat Collar**

Yes | No

**MOISTURE BARRIER/THERMAL LINER CONSTRUCTION:** The liner collar shall be a layer of self material and a layer of CROSSTECH® Black. The design shall be



compatible with the outer shell so that the liner does not buckle, pull, or otherwise restrict body motion. The left and right fronts of the liner collar shall be attached to the facings at the front closure of the outer shell. The neck of the liner collar shall be secured to the neck of the outer shell collar such that when donning the coat an arm may not be accidentally caught between the outer shell and its inner linings. A 4" wide CROSSTECH® Black and 1.75" self-material extension shall be sewn the full length of the neck with two pieces of 1" loop for attachment to shell collar. The self material extension shall overlap the shell collar to prevent exposure of the hook and loop. Collar closure shall be provided by FR hook and loop 1.5" x 4", with hook portion sewn on right side of collar, and loop portion sewn on left, set horizontal.

COLLAR: The 3" split collar shall consist of two piece construction shaped for comfort. The collar shall be configured such that when the collar is raised it shall remain standing while providing continuous thermal and moisture protection around the neck and face. To ensure this protection, the two layers of outer shell collar shall be fully lined with a layer of CROSSTECH® Black. The shell collar shall provide proper interface with the liner to insure no moisture penetration through the collar seam to the inside of coat. The shell collar shall have two pieces 3/4" hook along top edge for liner attachment. The collar shall be attached to the liner facing using 3/4" hook. Collar shall be of such design so as not to interfere with SCBA face masks, or helmet.

**Collar Flashing**

Yes | No

No Spec

**Liner Inspection System**

Yes | No

There shall be an 11" opening located on the coat liner system at the center left front of the liner. This opening will provide the ability to completely invert the coat liner to properly view the integrity of the entire liner system. There shall be one piece 1" x 4" FR loop sewn to the back side of the liner system with a piece of 1.5" x 3" FR hook sewn to the inside of the outer shell to ensure proper alignment when installing the liner system into the outer shell. This Liner Inspection System is completely hidden when the liner is properly installed into the outer shell.

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***Coat Options***

Yes | No

\*\*\* Accessories that will be included with the Coats; listed below, if any...

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***Coat Pockets***

Yes | No

Coat pocket specifications listed below

**Turn-Out Pockets**

Yes | No

8" wide x 8" deep outside full bellows pockets that expand by means of side and bottom gussets to a thickness of 2" in front and back.

Pockets shall be fully lined three sides with KEVLAR® twill. The back of the pocket (coat front or pant leg) shall be similarly reinforced to height of 3".

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket corners and top corners of flap reinforced with bar tacks for additional strength. Drainage of moisture to be provided by brass eyelets.

Pocket flaps shall be 9"x 5", folded and stitched at 1.5" width to correspond with pocket gussets. The flap shall extend 3" down to give a creased and contoured pocket flap.

A hook and loop fastener closure system shall be set with 1.5" x 8" loop fastener horizontally on the pocket and (2) pieces of 1.5" x 2.75" hook fastener vertically on the underside of the flap.

**Item Location for Above**

Yes | No

Shall be located on left and right of the front bottom.

**Turn-Out Pockets**

Yes | No

One 3.5" wide x 9" deep full bellows radio pocket that expands by means of side and front gussets to a thickness of 2" in front and back.

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket corners and top corners of flap reinforced with a minimum 42-stitch bar tack. A brass eyelet shall provide drainage of moisture.

Pocket flaps shall be 4.5"x 5".

Pocket shall be fully lined all 3 sides inside pocket with polycotton lining.

Pocket flap shall close to the pocket top using 1 piece of 1"x 2" loop on pocket horizontally and 1 piece of 1"x 2" hook on flap vertically.

Pocket flap shall include a notch on the flap to accommodate an antenna.

**Item Location for Above**

Yes | No

Shall be located on the left side of the chest.

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**Mic Tab**

Yes | No

There shall be a 1" X 3" triple layer self -fabric mic tab attached with bar tacks on each side. Bar tacks shall be a minimum 42-stitch bar tack

**Item Location for Above**

Yes | No

Shall be located on the left chest above radio pocket

**Item Location for Above**

Yes | No

Shall be located on the right chest

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**Flashlight Strap**

Yes | No

There shall be a 1" x 8.5" self fabric flashlight holder x-stitched to the outer shell of coat. Strap shall have 1"x 2" hook applied to one end of the strap and 1"x 2" loop applied to opposite end of strap.

There shall be a 703 hook applied to outer shell 5" above the self fabric strap. It shall be securely fastened to the coat by means of a self fabric strap looped through the end of the 703 hook and bartacked to the outer shell.

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<b>Sewn On Lettering</b>	Yes   No
There shall be 3" red/orange Scotchlite letters sewn-on.	
<b>Lettering</b>	Yes   No
Lettering shall be J C F P D	
<b>Location for Lettering</b>	Yes   No
Shall be arched across the yoke	

## Janesville® Super Pant™

<b>Pant Model / Design</b>	Yes   No
<p><b>PANT CONSTRUCTION:</b> The pant shall be no more than 1" higher in the front than a standard bunker pant with a gradual increase to 2" higher than a standard bunker pant in the rear.</p> <p><b>RADIAL INSEAM BAND:</b> The pant inseam shall incorporate a comfort/mobility design in all layers. The banded pant insert shall run continuously from the top of the mobile knee of one leg, through the crotch, to the top of the mobile knee of the opposite leg. This design eliminates crotch seams therefore eliminating crotch seam failure. This design also provides a more comfortable fit and increased mobility while decreasing bunching of materials</p> <p><b>FREEDOM KNEE:</b> The knee shall incorporate a comfort/mobility design in all layers. This design shall allow for a natural bending motion of the knee. The apex of the knee shall allow for not less than a 1.5" bellows at the center. The radial seam shall provide a gusset that the knee can fall into when crawling, climbing, bending, kneeling, etc... The bottom of the mobile knee shall be placed not less than 10" from the cuff to fall anatomically correct.</p> <p><b>WAISTBAND:</b> The waist of the pants shall be reinforced on the inside with two-ply of outer shell fabric material not less than 1.5" in width. The pant waist shall be turned under to provide double material strength with the independent waistband, which shall then be double stitched to the outer shell.</p>	

<b>Pant Outer Shell Material</b>	Yes   No
The outer shell shall be constructed of +/- 6.5 oz./sq. yd 65% Kevlar®/35% Nomex® twill weave with extremely durable FPPE water resistant Teflon® FPPE alloy.	

<b>Fabric Color</b>	Yes   No
Color shall be khaki	

<b>Pant Liner &amp; Moisture Barrier</b>	Yes   No
<p><b>THERMAL LINER:</b> Prism 65% Meta-Aramid/20% FR Viscose/11% Nylon/4% Para-Aramid face cloth (3.6 oz./sq. yd.) quilted to virgin 50% para-aramid/50% meta aramid batting weighing approximately 3.75 oz./sq. yd. (Total weight +/- 6.75 oz./sq. yd.)</p>	

**MOISTURE BARRIER: CROSSTECH® BLACK (Type 2F):** NOMEX® substrate laminated to a lightweight breathable, Teflon membrane; weighing 5.0 oz./sq. yd.

**MOISTURE BARRIER/THERMAL LINER CONSTRUCTION:** Design shall be compatible with the outer shell so that the liner does not buckle, pull, or otherwise restrict body motion. To deter the wicking of moisture up the thermal liner leg the bottom nine inches of each thermal leg shall be constructed of Semper Dri (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to one layer NOMEX®/Kevlar® spunlace aramid 85%NOMEX®/15% KEVLAR® weighing approximately 2.3 oz./sq. yd. with a Teflon® finish and one layer of apertured (11-13 apertures/sq. inch) NOMEX®/Kevlar® spunlace aramid 85% NOMEX®/15% KEVLAR® weighing approximately 1.5 oz./sq. yd. with a Teflon® finish. (Total weight +/- 6.8 oz./sq. yd.)). The waist of the moisture barrier/thermal liner shall be secured to the waist of the outer shell such that when donning the pant a leg may not be accidentally caught between the outer shell and its inner linings along the waist and between the legs of the pant.

**Quilt Thermal Liner Construction:** The moisture barrier shall be completely sewn to the thermal liner at its perimeter with the breathable membrane oriented inward toward the thermal liner and away from the outer shell. The moisture barrier/thermal liner shall finish no more than 3" from the cuffs.

**MOISTURE BARRIER/THERMAL LINER ATTACHMENT: Completely Removable:** The moisture barrier/thermal liner shall be completely detachable from the outer shell for ease of cleaning by using snaps. Nine evenly spaced snaps shall secure the liner to the integral waistband; Two snaps shall be set in leather leg tabs at each leg end.

All moisture barrier seams shall be sealed as required by NFPA 1971.

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**Reflective Trim**

Yes | No

All trim shall be sewn with four rows lockstitch 301, minimum six stitches/inch for most secure trim attachment.

Ventilated Trim shall be of 3" Scotchlite II (triple trim) of red/orange perforated with 0.08 mm holes (114 per square inch) to provide a conduit for the release of vapor that can occur when moisture is heated and the trim compressed.

Pant trim shall be applied as follows: one strip set full circumference around the bottom of the cuff 3" from the bottom cuff.

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**Pant Fly Closure**

Yes | No

**STORM FLY/CLOSURE:** The outer shell shall have an overlapping fly front running the full length of the fly on the left side. The flap shall not be less than 2.5" wide at the waistband. The bottom of the fly shall be reinforced with a 42 stitch bartack.

The storm fly shall be held closed along its length by means of a hook and loop fastener closure 1.5" minimum width, along the leading edge for a distance of not less than 6" from the bottom of the fly closure to the waist area for proper alignment and secure closure. Additionally, one snap shall be positioned at the inside top of the fly. Pant closure shall be provided by a thermo plastic zipper.

The storm fly shall be outer shell material, lined with a 3.5" strip of CROSSTECH® (Type 2C) moisture barrier material to prevent wicking.

THERMAL FLY ASSEMBLY: The moisture barrier/thermal liner shall be constructed with an extension on the left side at the waist of all layers of the fly opening to assure continuous thermal and moisture protection. This overlap shall be positioned between the layers of the outside storm fly. A 3/4" wide x 9" long hook fastener shall be sewn to the moisture barrier/thermal liner to engage corresponding loop fastener on the underside of the outside storm fly.

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**Take Up Straps**

Yes | No

There shall be two waist straps sewn and bar tacked 2 1/2" down from the top of the waistband. One strap shall be installed on the right side and one on the left side constructed out of one piece of shell material folded to two layers and sewn to form a 1/2" wide strap. Each strap shall be a minimum of 8 1/2" in length. These take-up straps shall have a 5/8" nickel plated postman style slide buckle which shall be attached by a piece of shell material six (6) inches in length folded to form two layers. The strap is sewn to form an attachment strap approximately three (3) inches in length designed for quick take-up adjustment.

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**Pant Knee Reinforcement**

Yes | No

The knee shall be split cowhide leather material and measure 9" across the bottom, not less than 7" on the sides and gradually increase to 12" at the center point at the apex. For added thermal protection, an additional layer of 1/8" thick, fire retardant closed-cell foam shall be positioned between the moisture barrier and thermal liner. For additional extended thermal protection, 2 layer(s) of 1/8" thick, fire retardant closed-cell foam shall be also be positioned between the reinforcement layer and outershell.

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**Pant Cuff Reinforcement**

Yes | No

The cuff area of the pant shall be reinforced with a binding of grey split cowhide leather not less than 2" in total width for greater strength, abrasion resistance, and thermal protection. In addition a 3" x 3 1/2" piece of reinforcement material shall be sewn on the inseam area of the pant leg above the pant cuff and below the pant trim, in order to provide extra abrasion protection. The material used on the kick shield shall match the material used on the pants cuffs.

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**Leg Tabs**

Yes | No

Two grey leather leg tabs 3/4" wide x 1 3/4" long with female snaps shall be bartacked 2" up from bottom edge on inside of the pant cuff with one on the inseam and one on the outseam.

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**Liner Inspection System**

Yes | No

There shall be an opening located on the pant liner system to the right side of the waist separating the thermal barrier and moisture barrier, approximately 10" in length. This

opening will provide the ability to completely invert the pant liner to properly view the integrity of the entire liner system. There shall be a piece of 1" x 3" FR loop sewn to the moisture barrier 3" over from beginning of opening and a corresponding piece of 1" x 3" FR hook sewn to the inside of the outer shell to ensure proper alignment when installing the liner system into the outer shell. This Liner Inspection System is completely hidden when the liner is properly installed into the outer shell.

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### ***Pant Options***

Yes | No

\*\*\* Accessories that will be included with the Pants; listed below, if any...

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### **Suspenders**

Yes | No

#### **SCOPE**

A highly engineered \*42" red suspender designed for greater range of mobility and reduced stress allowing for four points of attachment, using self-fabric, leather-reinforced suspender tabs with snaps to a V-Force™, traditional or contoured waist bunker pant.

#### **DESIGN**

Two \*\*11" front pull straps shall be constructed as follows: 2" wide elastic polyester webbing shall be fed through 2" metal loops and secured with a two-needle lock-stitch at one end. A black military finish steel double dee ring shall be fed through the webbing. The other end of the webbing shall be fed through a 2" wide thermo-plastic dee ring and secured with a two-needle lock-stitch. The dee ring shall function as a pull strap for easily adjusting the suspenders for proper fit.

Two 1" shoulder straps shall be constructed as follows: 2" wide elastic polyester webbing shall be fed through the top half of the steel double dee ring and secured with a two-needle lock-stitch. The top of each strap shall be secured to the V-shaped shoulder pad with two-needle lock-stitch and two 42-stitch bartacks. Two \*\*\*8" back straps made of 2" wide elastic webbing shall be joined with two-needle lock-stitch at the bottom of each V-shaped shoulder pad.

Four 2" wide self-fabric suspender tabs with leather reinforcement, using 2 male and 2 female logo snaps for suspender attachment, shall be required on pants for use of these suspenders. Two self-fabric suspender tabs shall be attached to the back of the pant and to the front of the pant and reinforced with two bartacks each tab. Each self-fabric tab attached to the pants shall be fed through each 2" metal loop on the suspenders.

#### **V-SHAPED SHOULDER PADS**

Shoulder pads shall be constructed of two layers of 1/8" thick, fire retardant closed-cell foam encapsulated in 7.5 oz. Black NOMEX®. Each shoulder pad shall be 3" wide and 12" long ending in a 4" high back reinforcement pad. Each shoulder pad shall have an embroidered Lion Head Logo.

#### **LIFETIME WARRANTY**

All products shall be warranted against defects in materials and workmanship for the useful life of the product.

Changes to provide 36" and 48" lengths

SR836X (36" length) - \*36" red, \*\*7" front pull straps, \*\*\*6" back straps  
SR848X (48" length) - \*48" red, \*\*15" front pull straps, \*\*\*10" back straps  
SR854X (54" length) - 54" red, \*\*20" front pull straps, \*\*\*11" back straps

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**Suspender Tabs**

Yes | No

Four 2" wide self material suspender tabs with 1.75x3" leather reinforcement shall be attached to waist with two on the front and two on the back. Each tab shall have two male and two female logo snaps. Each tab shall be reinforced with two bartacks on each tab.

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***Pant Pockets***

Yes | No

Pant pocket specifications listed below

**Turn-Out Pockets**

Yes | No

10" wide x 10" deep outside full bellows pockets that expand by means of side and bottom gussets to a thickness of 2" in front and back.

Pockets shall be reinforced with leather 5" up outside on pocket & 3" up inside on shell

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket corners and top corners of flap reinforced with bar tacks for additional strength. Drainage of moisture to be provided by brass eyelets.

Pocket flaps shall be 11" x 6".

A hook and loop fastener closure system shall be set with 1" x 10" loop fastener horizontally on the pocket and (3) pieces of 1" x 4" hook fastener vertically on the underside of the flap.

**Item Location for Above**

Yes | No

Shall be located on each thigh.

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