



# CITY of NOVI CITY COUNCIL

Agenda Item C  
July 7, 2014

**SUBJECT:** Approval to award bid for the purchase of Fire Department protective turnout gear to Apollo Fire Equipment, the lowest qualified bidder, for a period of one (1) year with a one-year renewal option based on unit pricing for an estimated annual amount of \$21,456.

**SUBMITTING DEPARTMENT:** Public Safety - Fire *DOM*

**CITY MANAGER APPROVAL:** *VK*

EXPENDITURE REQUIRED	\$21,456
AMOUNT BUDGETED	\$26,500
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	101-337.00-741.000

**BACKGROUND INFORMATION:**

The National Fire Protection Association (NFPA 1851) Standard limits structural firefighting turnout gear ensemble components to a maximum service of ten (10) years from date of manufacture. This standard, and the manufacturer's recommendation, suggests that after ten (10) years of service all components including turnout coats and pants be removed from service and no longer used for structural firefighting. The moisture barrier within the bunker gear begins to fail after each successive fire the gear is exposed to. Likewise, the outer shell can absorb harmful carcinogens and is continually subjected to cuts, tears and abrasions during normal use at a structure fire. The Department currently inspects and washes bunker gear on an annual and as-needed basis according to the Standard. In addition, we will send gear out for necessary repairs when needed; thereby extending its useful life to the ten year period.

The Novi Fire Department currently has 80 full and part-time members of the organization and a standardized replacement schedule has been established for these coats and pants. A new set of gear is purchased for all new hires. The replacement of the turn-out gear has been included in the annual uniform budget for the 2014-15 fiscal year.

A Request for Proposals (RFP) for turnout gear was developed and posted on the Michigan Intergovernmental Trade Network (MITN). Five (5) bids were received on Tuesday, June 3, 2014. Apollo Fire Equipment was the lowest qualified bidder meeting all the specifications.

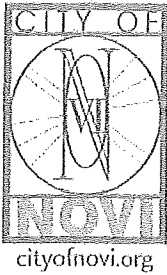
**RECOMMENDED ACTION:** Approval to award bid for the purchase of Fire Department protective turnout gear to Apollo Fire Equipment, the lowest qualified bidder, for a period of one (1) year with a one-year renewal option based on unit pricing for an estimated annual amount of \$21,456.

	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Fischer				

	1	2	Y	N
Council Member Markham				
Council Member Mutch				
Council Member Wrobel				

**CITY OF NOVI**  
**FIREFIGHTER TURNOUT GEAR BID TABULATION**  
**Tuesday, June 3, 2014 2:00 P.M.**

	Apollo Fire Equipment	Time Emergency Equipment	Time Emergency Equipment (voluntary alternate)	Fire Equipment Associates	West Shore Fire
<b>QUANTITY</b>	12	12	12	12	12
<b>COAT</b>					
Manufacturer/Model	Lion Super-Deluxe Janesville	Globe G-XCEL	Globe G-Extreme	Ricochet Maximum Mobility	Fire - Dex
Unit Price	\$ 1,101.00	\$ 1,095.00	\$ 1,140.00	\$ 1,230.00	\$ 1,720.00
<b>Total Coats</b>	<b>\$ 13,212.00</b>	<b>\$ 13,140.00</b>	<b>\$ 13,680.00</b>	<b>\$ 14,760.00</b>	<b>\$ 20,640.00</b>
<b>PANT</b>					
Manufacturer/Model	Lion Super Pant Janesville	Globe G-XCEL	Globe G-Extreme	Ricochet Maximum Mobility (includes suspenders)	Fire - Dex
Unit Price	\$ 687.00	\$ 778.00	\$ 840.00	\$ 935.00	\$ 1,155.00
<b>Total Pant</b>	<b>\$ 8,244.00</b>	<b>\$ 9,336.00</b>	<b>\$ 10,080.00</b>	<b>\$ 11,220.00</b>	<b>\$ 13,860.00</b>
<b>SUSPENDER</b>					
Manufacturer/Model	Lion - SB342	Globe	Glove	Ricochet	Fire Dex
Unit Price	Included in pant price	included with pants	included with pants	\$35.00 for spare set	included in pant specs
<b>Total Suspender</b>	\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL PRICE</b>	<b>\$ 21,456.00</b>	<b>\$ 22,476.00</b>	<b>\$ 23,760.00</b>	<b>\$ 25,980.00</b>	<b>\$ 34,500.00</b>
Authorized Dealer	Yes	Yes	Yes	Yes	Yes
Hours of Operation	M-F 7:30-4:30	9 am - 5 pm 248-674-4253; 800-423-6628	9 am - 5 pm 248-674-4253; 800-423-6628	8-5, Mon-Fri Kevin Sprygada	8:30 am-5:00 pm 616-895-4347
Contact phone	800-626-7783				
Delivery	90 days	30-45 days	30-45 days		4-6 weeks
Warranty	See attached	See attached	See attached	Manufacturers	Serviceable lifetime of gear
Payment Terms	30 days	Net 30 days	Net 30	Net 30	Net 30
Descriptive Literature Attached & Marked:	Yes	Yes	Yes	Yes	No
Extended to MITN Group	Yes	No	No	Yes	Yes
Specification Pages Attached	Yes	Yes	Yes	Yes	Yes



**CITY OF NOVI  
BID PROPOSAL FORM**

**TURNOUT GEAR**

We, the undersigned as bidder, propose to furnish to the City of Novi, according to the specifications, conditions and instructions attached hereto and made a part thereof:

Company Name: Apollo Fire Equipment

**Proposal:**

Item	Min. Qty	Description	Unit Price	Total Price
1.	12	Coat: Manufacturer/Model <u>LION SUPER-DELUXE</u> <u>"JANESVILLE"</u>	1101 <sup>00</sup>	\$ 13,212 <sup>00</sup>
2.	12	Pant: Manufacturer/Model <u>LION SUPER-PANT</u> <u>"JANESVILLE"</u>	687 <sup>00</sup>	\$ 8,244 <sup>00</sup>
3.	12	Suspender: Manufacturer/Model <u>LION- SB342</u>	Included in Pant Price	--

Note: Unit price includes all delivery costs, handling, packaging, and service charges.

**NOTE: THE SPECIFICATION SHEETS MUST BE COMPLETED AND SUBMITTED WITH THE BID PROPOSAL.**

**Unit Prices:**

Unit prices prevail. The City of Novi Purchasing Department will correct all extension errors.

**Authorized Dealer:**

Our company is an authorized distributor of this turnout gear: Yes  No

**Contact information:**

Hours of operation: M-F 7:30 - 4:30 Contact phone: 800-626-7783

Delivery after receipt of order (120 days maximum): 90 DAYS

Warranty: SEE ATTACHED

Payment Terms: 30 DAYS

**Order Quantities:**

The City of Novi will order a minimum quantity of 12 for the initial order with the option to order more during the contract period. **Please note: the initial order will not be placed until after July 1, 2014.**

**Descriptive Literature:**

Please attach descriptive or pertinent literature relevant to your company's bid proposal at the time of bid submission. **Please label the literature with your company name.**

**Delivery:**

All items are to be quoted as F.O.B. delivered, freight paid, to the City of Novi Fire Department, 42975 Grand River Avenue, Novi, MI 48375, Attn: Ramon Alvarez

**Down-payments or pre-payments:**

Any bid proposal submitted which requires a down-payment or prepayment prior to delivery and full acceptance of the item(s) as being in conformance with specifications will not be considered for award.

**Award:**

Award of this bid shall be a combination of factors including, but not limited to the following: Fit with respect to the specifications, bid price, warranty, and the correlation of the proposal submitted to the needs of the City of Novi. The City of Novi reserves the right to award this bid to the lowest responsible bidder meeting specifications; to reject low bids which have major deviations from the specifications; to accept a higher bid which has only minor deviations.

**Purchase Order:**

After approval of the successful bidder by the Novi City Council, the purchase order issued by the City of Novi will create a bilateral contract between the parties and commit the successful bidder to perform the contract in accordance with specifications. A contract document/ agreement will not be issued.

**Approved Alternates:**

The designated department representative or his / her designee will review all items submitted for consideration as an approved alternate. Their decision as to acceptability will be deemed in the City of Novi's best interest and will be final. Descriptive literature with detailed specifications must be included with your bid submission.

**EXCEPTIONS: (All exceptions to specifications of the turn-out gear itself are to be noted on the Specification pages. This section is for any other exceptions.)**

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COMMENTS: \_\_\_\_\_  
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**EXTENSION OF AWARD TO THE MITN (MICHIGAN INTER-GOVERNMENTAL TRADE NETWORK)  
PURCHASING COOPERATIVE: OPTIONAL**

Numerous Counties, Cities, Townships, and Authorities of the State of Michigan are members of the MITN (Michigan Inter-governmental Trade Network) Purchasing Cooperative. Other associate entities are also members of the Cooperative in the Tri-County area. Please visit [www.mitn.info](http://www.mitn.info) website to view the entire list of participating agencies.

If an award is made to Apollo Fire Equipment, it is agreed that the contract will be extended to other MITN Purchasing Cooperative members and associate entities under the same prices, terms, and conditions.

Our company is **NOT** interested in extending the contract to those MITN members listed on the website

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We acknowledge receipt of the following Addenda: 20

**THIS BID PROPOSAL SUBMITTED BY:**

Company (Legal Registration) Apollo Fire Equipment

Address 12584 Lakeshore Dr.

City ROMEO State MI Zip 48065

Telephone 800-626-7783 Fax 586-752-6907

Representative's Name (please print) David Duddles

Representative's Title Salesman

Representative's Signature David Duddles

E-mail dduddles@apollofire.com

Date 6-2-14

Company Name Apollo Fire Equipment

**CITY OF NOVI  
STRUCTURAL FIREFIGHTING TURNOUT GEAR  
SPECIFICATIONS**

**GENERAL:**

Each bidder shall return the completed Bid Proposal and Specification pages with their bid submission. All gear must meet or exceed the requirements listed below. An acceptable manufacturer is Janesville turnouts. The City holds sole discretion whether a product meets the minimum requirements. All equipment is to be F.O.B. delivered freight paid to the City of Novi Fire Department.

VENDOR SHOULD INDICATE UNDER EACH ITEM, WHETHER HE / SHE MEETS THE REQUIRED SPECIFICATIONS BY CIRCLING "YES" OR "NO". IF AN ITEM IS MARKED WITH A "NO" AN EXPLANATION SHALL BE PROVIDED. A **BLANK ITEM** WILL BE INTERPRETED TO MEAN THAT THE VENDOR **DOES NOT MEET SPECIFICATIONS** AND THE CITY MAY DISQUALIFY THE VENDOR'S BID PROPOSAL FROM FURTHER CONSIDERATION.

**IMPORTANT:** *The City of Novi reserves the right to disqualify any bidder who indicates that the GEAR under consideration meets any listed specification and it is determined that the gear clearly does not meet specifications.*

**Protective Clothing Specifications**

**Meets Requirements?**

**Scope**

Yes  No

The purpose of the clothing is to provide protection during structural firefighting 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Standard**

Yes  No

All garments produced shall meet or exceed the criteria set forth in the current edition of NFPA 1971 PROTECTIVE CLOTHING FOR STRUCTURAL 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Meets Requirements**

**User Guide Information**

Yes |  No

Each garment shall include a 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Meets Requirements**

**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:

- a. unique serial number
- b. item description (brand, model, material color)
- c. lot information (date of mfg., size, etc.)
- d. material description
- e. 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.

**EXCEPTIONS TO SPECIFICATIONS**

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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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Warranty**

Yes |  No

Each garment shall have a limited lifetime warranty against defects in material and workmanship.

**EXCEPTIONS TO SPECIFICATIONS**

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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 35 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 205 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.

**EXCEPTIONS TO SPECIFICATIONS**

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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.

**EXCEPTIONS TO SPECIFICATIONS**

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Company Name Apollo Fire Equipment

Meets Requirements

**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,  
2011 EDITION**

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

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Commando™ Coat**

**Coat Model / Design**

Yes  No

**COAT CONSTRUCTION:** The coat shall be designed of a 3-panel construction in all layers to provide a proper fit. 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.

When measured at the center of the back from the collar seam to the hem bottom, the coat shall measure 32" long.

**EXCEPTIONS TO SPECIFICATIONS**

"NOTE" Commando Coat  
HAS BEEN RE-MADE BY SUPER-INSULATED LIGNS.

Meets Requirements

**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.

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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Coat Outer Shell Material**

Yes | No

The outer shell shall be constructed of +/-7.25 oz./sq. yd. 40% PBI@/60% KEVLAR® highly constructed ripstop weave with extremely durable FPE water resistant Teflon® FPE alloy reinforced with a matrix of 600 denier filament Kevlar® cables. Color shall be natural (gold).

**EXCEPTIONS TO SPECIFICATIONS**

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**Coat Liner & Moisture Barrier**

Yes | No

THERMAL LINER: 3.5oz./sq. yd. Glide™ (NOMEX® filament/spun) face cloth quilted to 1 layer E-89™ spunlace aramid 85%Nomex/15% KEVLAR® weighing approximately 2.3 oz./sq. yd. with a Teflon® finish, and 1 layer of apertured (11-13) apertures/sq. inch) E-89™ spunlace aramid 85%Nomex/15% KEVLAR® weighing approximately 1.5 oz./sq. yd. with Teflon finish (total weight +/- 7.3 oz./sq. yd.).

MOISTURE BARRIER: NOMEX® substrate laminated to a lightweight breathable, CROSSTECH® (Type 2C), 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: 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.

Meets Requirements

**Coat Liner & Moisture Barrier (Continued)**

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 brass 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Reflective Trim**

Yes | No

All trim shall be sewn with four (4) rows lockstitch 301, minimum (6) stitches/inch for most secure trim attachment.

All trim shall be: 3" Scotchlite™ II (triple trim) of lime/yellow

Coat trim shall be applied as follows: High Visibility Pattern: (1) 3" strip shall be set full circumference at the bottom sweep of the outer shell; (1) 3" strip shall be set around each sleeve approximately 2" from bottom of sleeve cuff; (1) 3" strip shall be set around each sleeve just above the elbow; (1) 3" strip shall be set full circumference at the chest; (2) 3" strips shall be set vertically on the back of the coat forming a box with the upper back strip and sweep strip.

**EXCEPTIONS TO SPECIFICATIONS**

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**Coat Collar**

Yes | No

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. The left and right fronts of the moisture barrier/thermal liner shall be attached to the facings at the front closure of the outer shell. The neck of the moisture barrier/thermal liner 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 along the neck between the armholes. Liner shall have a 2" wide, 2-ply CROSSTECH®/NOMEX® pajama check extension sewn the full length of the neck. FR loop, 3/4" wide, shall be sewn on extension to tuck into pleat in outer shell collar.

COLLAR: The collar shall be of three piece contoured 4-layer configuration 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 one layer of Gore RT7100™ PTFE moisture barrier material and two layers of 1.5 oz. apertured E-89™ thermal liner. The collar shall provide proper interface with liner to insure no moisture penetration through the collar seam to inside of coat.

The collar shall be contoured and shall completely cover the neck and throat area when in the raised position. Raised height shall be approximately three inches with a contoured overlap at the front of the coat. 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 shall be of such design so as not to interfere with SCBA face masks, nor helmet.

Meets Requirements

**Coat Collar (Continued)**

When examined prior to donning, the turned up collar shall completely wrap around the front of the neck opening such that left and right collars touch or overlap to maximize facial protection.

The three piece contoured 4-layer collar shall be sewn with a pleat on the innermost layer. Pleat shall have 3/4" FR hook sewn on the underside to engage the moisture barrier extension on the liner.

**EXCEPTIONS TO SPECIFICATIONS**

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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.

**EXCEPTIONS TO SPECIFICATIONS**

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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 araflo/E-89™ (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.

**EXCEPTIONS TO SPECIFICATIONS**

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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 outershell material for abrasion resistance and thermal protection. For additional thermal protection and cushioning, one layer of uninterrupted 1/8" thick, fire retardant closed-cell foam shall be oriented between the outer shell and the shoulder cap reinforcement.

**EXCEPTIONS TO SPECIFICATIONS**

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**Coat Elbow Reinforcement**

Yes  No

The elbow shall be reinforced with self fabric for abrasion resistance and thermal protection. In addition to reinforcement, elbows shall be padded using one layer of uninterrupted 1/8" thick, fire retardant closed-cell foam. The reinforcement material shall be oriented between the outer shell and elbow insert reinforcement.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Coat Cuff Reinforcement**

Yes  No

The cuff of the sleeve shall be reinforced with a binding of outer shell material 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

**EXCEPTIONS TO SPECIFICATIONS**

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**Coat Wristlets**

Yes  No

An internal wristlet shall consist of a 2-ply knit of 48% NOMEX®/48% KEVLAR® and 4% Spandex for superior recovery. Wristlet to be combination of natural and bronze colors producer dyed by DuPont, and with extremely durable Teflon® water resistant alloy 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Waterwells – Ever-Dri**

Yes  No

A combination Semper Dri™ (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to one layer E-89™ 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) E-89™ spunlace aramid 85% NOMEX®/15% KEVLAR® weighing approximately 1.5 oz./sq. yd. with a Teflon® finish (total weight +/- 6.8 oz./sq. yd.)) / (1) layer of breathable CROSSTECH® (Type 2C) moisture barrier 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® (Type 2C) 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 snap 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.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**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 (2) layers of outer shell fabric.

**FRONT/STORM FLAP CLOSURES:** The front closure shall consist of a #9 brass zipper such that fast closure and exit is possible yet the coat remains securely closed while working. The storm flap closure shall consist of 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**COAT POCKETS**

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 reinforced with self-fabric 5" up outside on pocket.

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".

A hook and loop fastener closure system shall be set with 1.5" x 8" loop fastener horizontally on the pocket and (3) pieces of 1.5" x 3" 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.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Turn-Out Pockets (Continued)**

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**

Shall be located on the left side of the chest.

Yes  No

**EXCEPTIONS TO SPECIFICATIONS**

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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**

Shall be located on the left chest above radio pocket

Yes  No

**EXCEPTIONS TO SPECIFICATIONS**

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**Flashlight Strap**

Yes  No

There shall be a 1" x 2" two- layer self-fabric 703 flashlite snap holder with 2 bartacks.

**Item Location for Above**

Shall be located on right Chest 4" above the FLS558.

Yes  No

**EXCEPTIONS TO SPECIFICATIONS**

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**Flashlight Strap**

Yes  No

2"x10" self-fabric strap x-stitched at the center shall close around the flashlight with 1 piece of 2" x 3" hook fastener on one end and 1 piece of 2" x 3" loop on the other.

**Item Location for Above**

Shall be located on right Chest 4" below the FLS510.

Yes  No

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Lettering Patches**

Yes  No

There shall be one 5"x18" contoured 2-layer self-fabric one-line Letter Patch attached to hang from back hem.

**EXCEPTIONS TO SPECIFICATIONS**

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**Lettering Patch Attachment**

Yes  No

Hook & loop shall be used to attach patch to coat.

**Lettering Patch Attachment**

Yes  No

LETTER PATCH ATTACHMENT: There shall be one male snap at each top corner of hanging letter patch (total of two male snaps) and two female logo snaps on the inside of the shell to align with the male snaps.

**EXCEPTIONS TO SPECIFICATIONS**

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**Sewn On Lettering**

Yes  No

There shall be 3" lime yellow Scotchlite letters, sewn-on.

**EXCEPTIONS TO SPECIFICATIONS**

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**Lettering**

Yes  No

Lettering shall be FF NAME.

**Location for Lettering**

Yes  No

Shall be on a patch

**EXCEPTIONS TO SPECIFICATIONS**

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**Liner Inspection System**

Yes  No

COAT LINER INSPECTION SYSTEM: There shall be an opening located on the coat liner approximately 11" in length at the center back of the neck separating the thermal barrier and moisture barrier. 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 .75"x 4" FR loop sewn to the back side of the liner system with a corresponding piece of .75"x 4" 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.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

Janesville® Super Pant™

**Pant Model / Design**

Yes  No

**PANT CONSTRUCTION:** 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.

**RADIAL INSEAM BAND:** 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.

**FREEDOM KNEE:** 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.

**WAISTBAND:** 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Pant Outer Shell Material**

Yes  No

The outer shell shall be constructed of +/- 7.25 oz./sq. yd. 40% PBI®/60% KEVLAR® highly constructed ripstop weave with extremely durable FPE water resistant Teflon® FPE alloy reinforced with a matrix of 600 denier filament Kevlar® cables. Color shall be natural (gold).

**THERMAL LINER:** 3.5 oz./sq. yd. Glide™ (NOMEX® filament/spun) face cloth quilted to 1 layer E-89™ spunlace aramid 85%Nomex/15% KEVLAR® weighing approximately 2.3 oz./sq. yd. with a Teflon® finish, and 1 layer of apertured (11-13 apertures/sq. inch) E-89™ spunlace aramid 85% Nomex/15% Kevlar weighing approximately 1.5 oz./sq. yd. with a Teflon finish (total weight +/- 7.3 oz./sq. yd.).

**MOISTURE BARRIER:** NOMEX® substrate laminated to a lightweight breathable, CROSSTECH® (Type 2C), 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 E-89™ 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) E-89™ 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.

Meets Requirements

**Pant Outer Shell Material (Continued)**

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: 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Reflective Trim**

Yes  No

All trim shall be sewn with four (4) rows lockstitch 301, minimum (6) stitches/inch for most secure trim attachment. All trim shall be: 3" Scotchlite™ II (triple trim) lime/yellow. Pant trim shall be applied as follows: (1) strip set full circumference around the bottom of the cuff 3" from the bottom cuff. 2nd row of trim to be placed 3" above cuff trim or below knees.

**EXCEPTIONS TO SPECIFICATIONS**

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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, (1) snap shall be positioned at the inside top of the fly. Pant closure shall be provided by #9 brass 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.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Take Up Straps**

Yes  No

One adjustment device shall be affixed to the outside on each side of the pant. Each take-up strap shall be comprised of two sub-component straps. The front strap shall be 1" wide x 5" in length, folded in half to form a loop, and shall be affixed to the side of the pant by means of two bar tacks spaced 2" apart. The loop shall face toward the back and hold a nickel plated 1" metal loop. The back strap shall be 1" wide x 9" in length of double layered outer shell material and hook and loop fastener. The rear 4.5" shall be sewn and triple bartacked to the shell. The front section of the strap shall remain loose and be aligned so that it is threaded through the metal loop. It shall have a piece of 1" x 3" hook fastener attached to the loose strap end to engage the corresponding 1" x 4.5" loop fastener at end of strap to allow for adjustment.

**EXCEPTIONS TO SPECIFICATIONS**

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**Pant Knee Reinforcement**

Yes  No

The knee shall be split cowhide leather (gold) 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 resistant closed-cell foam shall be positioned between the moisture barrier and thermal liner.

**EXCEPTIONS TO SPECIFICATIONS**

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**Pant Cuff Reinforcement**

Yes  No

The cuff area of the pant shall be reinforced with a binding of gold 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.

**EXCEPTIONS TO SPECIFICATIONS**

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**Leg Tabs**

Yes  No

2 Leather leg tabs 3/4" wide x 1 3/4" long with female snaps. Bartacked 2" up from bottom edge on inside. (1 on inseam 1 on outseam)

**EXCEPTIONS TO SPECIFICATIONS**

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**Liner Inspection System**

Yes  No

PANT LINER INSPECTION SYSTEM: 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.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Belts and Harnesses**

Yes | No

LUMBAR SUPPORT: Each pant shall have a lumbar support system integrated into the pant. This device shall provide mechanical support for the back by generating intra-abdominal pressure without increasing abdominal muscle activity. Components of the lumbar support system include a 6" x 8" orthopedic, non-absorbent, fire retardant, closed-cell foam pad, elastic webbing, metal adjusters, and pull tabs.

The lumbar support system shall be oriented between the outer shell and liner. Each pant front shall have two tunnel openings reinforced with polymer coated aramid welts, for durability, spaced 7" apart on the front of the pant. Pull tabs, shall be constructed of black split cowhide leather, 1.5" wide x 5.5" long shall be sewn to two straps of 2" wide elastic webbing on each side of the pant. Elastic webbing shall be secured to center rear of pant. When the lumbar support system is deactivated, pull tabs shall be visible on the front of pants. 1.5" wide x 5.5" long loop fastener shall be sewn on the underside of each pull tab to engage the system.

The right elastic straps shall each have a 2" wide x 5" long loop fastener sewn on the underside, while the left elastic straps shall each have a 2" wide x 5" long hook fastener sewn on top for engaging the system. The left side of the pant outer shell shall have 1.5" wide x 3" long hook fastener for storage of pull tab and to help engage system. The right side of pant shall have 1.5" wide x 3" long hook fastener for storage of pull tab and to assist in engaging the system. The foam pad shall have one 4" wide x 5" long strip of hook fastener to engage two 2" wide x 7" long strips of loop fastener sewn to the rear of the pant to secure pad in place. The inside of the outer shell is reinforced with a piece of KEVLAR® twill 10" wide by 7" high.

**EXCEPTIONS TO SPECIFICATIONS**

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**Pant Pockets**

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. Pocket shall be split 6" front and 4" back inside pocket with a KEVLAR® twill divider.

Pockets shall be reinforced with Kevlar® twill fully lined 3 sides inside pocket & 3" up on shell.

Pockets and flaps 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 5".

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 set vertically on the underside of the flap.

**Item Location for Above**

Yes | No

Shall be located on each thigh.

**EXCEPTIONS TO SPECIFICATIONS**

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Meets Requirements

**Suspenders**

Yes  No

**SCOPE**

A highly engineered 42" black suspender designed for greater range of mobility and reduced stress allowing for eight points of attachment to a traditional or contoured waist bunker pant with traditional suspender buttons.

**DESIGN**

Two 8" front pull straps shall be constructed as follows: 2" wide non-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 18" shoulder straps shall be constructed as follows: 2" wide non-elastic polyester webbing shall be fed through the top half of the steel double dee ring and secured with a two-needle lock-stitch. Two 7" back straps made of 2" wide elastic webbing shall be joined with a 2" overlap at the end of each shoulder strap with a single-needle lock stitch. The end of each back strap shall be fed through a 2" metal loop and secured with a two-needle lock stitch.

One 2 1/2" horizontal back strap made of 2" wide elastic webbing shall be set perpendicular between the two shoulder straps and back straps at the point of overlap, secured with a single-needle lock-stitch, and reinforced with a two-needle lock-stitch "X" through the joining straps.

Four pieces of 2" wide elastic webbing shall feed through the 2" metal loops at each end of the front and back straps and be secured to 2" buttonhole peerless loops constructed of .080 diameter wire with a zinc plate finish. This will allow for eight points of attachment. Each piece of webbing shall be long enough so that when fed through the 2" metal loop and folded over, shall measure at least 2" long on each side. Each peerless loop shall be configured such that they easily rotate around a suspender button to allow for freedom of motion.

Each shoulder strap shall be encapsulated with a 2.25" wide x 13" long sheath of padding constructed of 1/8" thick fire-retardant closed-cell foam laminated to Nomex pajama check substrate. Shoulder pads shall start 1" up from the cross point of the horizontal back strap ("H" cross) and be bartacked at each end so they do not slide forward. Each shoulder pad shall have an embroidered Lion Head Logo.

**EXCEPTIONS TO SPECIFICATIONS**

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## WARRANTY INFORMATION

Lion Apparel, Inc. warrants that its fire fighter's protective products meet or exceed all applicable NFPA standards in effect at the time of their manufacture and further warrants that such products are free from any defect in workmanship or any patent material defect.

Conditions of use are outside the control of Lion Apparel. It is the responsibility of the user to inspect and maintain the products to assure they remain fit for their intended purpose. In order to maximize the useful life of these products, the products are to be used only by appropriately - trained personnel following proper fire fighting procedures and in accordance with the product's warning, use, and care instructions.

EXCEPT AS SET FORTH ABOVE, LION APPAREL, INC. MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OF FITNESS FOR ANY PARTICULAR USE.

Under the above warranties, Lion Apparel, Inc. will repair or replace, at its option, any protective product which does not meet the above warranties. Such repair or replacement will be the purchaser's sole remedy and Lion Apparel, Inc. will not be responsible for any incidental, consequential, or other damages based upon or arising in any way from any breach of the warranties contained herein or the purchaser's use of such product.

6oz. Pbi® outer shell: Experience has shown that six ounce outer shell fabrics exhibit reduced wear life and protective characteristics when compared to slightly heavier fabrics. Please note that Lion Apparel, Inc.'s Limited Lifetime Warranty against defects in materials does not include outer shells made from six ounce textiles.

These warranty obligations apply only to any product, part, or component which is returned to Lion Apparel, Inc. or a Lion Authorized Clean and Repair Center with prior authorization and proof of purchase, and which Lion Apparel, Inc. agrees to be defective as covered by this warranty.

The word "product" includes the product itself and any parts of labor furnished by Lion Apparel, Inc. with the sales, delivery, or servicing of the product.

The term "useful life" means the length of time the garment can safely be worn for structural fire fighting activities, without needing major structural repairs that would be economically infeasible. (A general rule recommended by SAFER is that a garment should be retired when the costs of repair would exceed 50% of the replacement cost.) The useful life will vary from garment to garment, according to type and frequency of use, and the weight and type of materials used in the garment. Lighter weight outer shell fabrics will have a shorter useful life than heavier outer shell fabrics. In practical terms, the average useful life of a fire fighter garment undergoing normal wear in an active fire department is 3-5 years.

"Defects in Workmanship and Materials" means poorly manufactured seams, stitching, or components (for example, loose or broken seams; zippers or snaps that fall off or do not function properly); and fabrics or barriers which have such flaws as holes, uneven spots, weak areas, pilling, or other flaws caused by irregularities in their manufacture.

## EXCEPTIONS TO WARRANTY

This lifetime warranty does not cover the following items after receipt of garments by end user:

- A. Claims made after 60 days from the date of shipment for damage to 6 oz. outer shell fabrics;
- B. Damage from exposure of raw materials to ultraviolet light;
- C. Shade variations among textiles used;
- D. Damage caused by improper cleaning or maintenance (for example, use of chlorine or petrochemicals to clean);
- E. Damage caused by repair work not performed to factory specification;
- F. Damage from routine exposure to common fireground hazards which may cause rips, tears, burn damage, or abrasion;
- G. Loss of retroreflectivity of reflective trim due to normal wear or heat exposure;
- H. Detachment of reflective trim due to thread abrasion or heat exposure;
- I. Replacement of zippers worn partially sealed, or damaged by heavy wear and tear;
- J. Damage to outer shell fabrics in knees, elbows, shoulders, and cuff areas not protected by reinforcements.