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# **Cowlitz 2 Fire & Rescue**

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Structural Fire Fighter  
Personal Protective  
Equipment Bid Instructions  
and Specifications

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**MINIMUM SPECIFICATIONS  
AND INFORMATION FOR  
STRUCTURAL PERSONAL PROTECTIVE EQUIPMENT BID**

Sealed proposals will be received by Cowlitz 2 Fire & Rescue at 701 Vine Street Kelso, Washington 98626 up to the time of 3:00 pm on October 18, 2010, for the furnishing of (48) Forty - Eight sets of Structural Fire Fighter Personal Protective Equipment (PPE), including bunker pants, bunker coats, helmets, boots, hoods, and gloves and other associated equipment as identified in the specifications. With the possibility of additional sets being purchased by other agencies. The sealed proposals are to be received at the Headquarters Fire Station on or before the date and time stated above. Bids will be opened at 3:05 pm. Cowlitz 2 Fire & Rescue accepts no responsibility for mail delays. Bids submitted via e-mail and/or fax will not be accepted.

The District reserves the right to reject any or all bids or parts of bids, or accept any presented which meets or exceeds these specifications, which it may deem to be in the best interests of the District, and is not necessarily bound to accept the low bid. The District further reserves the right to waive any informalities to best serve the needs and proceedings herein. The district also reserves the right to split the award between vendors.

All bids shall be inclusive of sales taxes, and be F.O.B. Cowlitz 2 Fire & Rescue 701 Vine Street Kelso, Washington 98626

Bidders will be notified of award within thirty (30) calendar days of the bid opening.

Each Bidder shall specify the maximum delivery date of the completed unit in calendar days to the above stated location. A maximum of sixty (60) calendar days may be allowed.

The PPE shall be bid as a complete unit, inclusive of all equipment specified. All trade name items listed shall be included in the base bid. If desired by the Bidder, other alternate trade name items may be listed on a separate sheet. These alternatives shall list price additions or deductions to be made if the alternate is chosen. Nothing herein shall be deemed as restricting to the Bidder a particular trade name or brand. However, any alternates to trade names or brands shown must meet or exceed these specifications.

## **BID INSTRUCTIONS AND REQUIREMENTS**

Sealed bids shall be received by Cowlitz 2 Fire & Rescue 701 Vine Street, Kelso, Washington 98626 hereafter referred to as the "District", up to October 18, 2010 for the furnishing of (48) Forty - Eight sets of Structural Fire Fighter Personal Protective Equipment, including bunker pants, bunker coats, helmets, boots, hoods and gloves and other associated equipment as identified in the specifications. At 3:00 pm on that date and location, the sealed bids shall be due. Submitted bids will be opened and read at 3:05 pm.

The District reserves the right to reject any and or all bids, to waive minor irregularities in any bid or the bidding procedure, and to accept any bid received which the District deems to be in the best interest of the District. The District is not bound to accept the low bid.

1. This bid shall be for (48) Forty - Eight sets of Structural Fire Fighter Personal Protective Equipment, including bunker pants, bunker coats, helmets, boots, hoods, and gloves and other associated equipment as identified in the specifications with the possibility of additional sets being purchased from other agencies, meeting all current requirements applicable, including National Fire Protection Association Standards 1971 and Washington State Administrative Code requirements.
2. These specifications shall become a part of the final contract. Bidders shall complete all response sheets completely, marking either "yes" or "no" to each specification. If any Bidder has any exceptions to these specifications, such exceptions must be stated in writing, and the Bidder shall describe in detail what is proposed in lieu of the specified requirement. Exceptions must be referenced by the corresponding section or sub-section in these specifications. Any bid submitted without exceptions shall be required to meet every detail of these specifications, regardless of the cost to the Bidder.

NOTE: Each paragraph or item included in these specifications will be treated as a separate and distinct entity, regardless of its possible inclusion in a previous portion of these Bid Specifications.

4. The manufacturer and/or dealer shall furnish satisfactory evidence of their ability to fulfill the bid as specified. This information must be available to the District for assurance as to the feasibility, durability, and safety of the product bid. Materials, workmanship, and continued availability of parts for repair shall be of such quality and control that this is a reasonable assurance of the consideration. It is the intention of the District to purchase equipment of proven design, and not a prototype.
5. All parts that are specified by model and/or manufacturer shall be delivered as specified. Any exception proposing a part considered being equal or other than those specified shall require approval by the District, and be listed in the attachments to the specification as an exception.

6. Each Bidder shall indicate in the bid their service facility, and their availability and intention for stocking or fabrication of replacement parts for the equipment offered. A statement stating the length of time parts for the unit shall be available will also be included.
7. Descriptive material, such as plans, drawings, photographs, diagrams, illustrations, written descriptions and manufacturer's literature which enable the District to determine exact quality, design and appearance of the specified PPE proposed shall accompany the bid response. The Bidder shall provide the references of three (3) departments that are currently using the gear that may be contacted by members of the Fire District.
9. The District reserves the right to inspect and test samples of PPE prior to award of bid.
10. Copies of all manufacturers' warranties shall be included with the bid. The supplier shall defend any and all suits, and assume liability for any claims against the District or any of its officials or agents for the use of any patent process, device or article forming a part of this PPE, or any appliance furnished under the contract.
11. A detailed set of manufacturer's specification of the proposed PPE shall be included with each bid response. This description shall be laid out in the same sequence as set forth in these specifications. In the event that any exceptions to the District's specification have been taken, the Bidder shall also include an explanation to establish that such exceptions are equal to, or exceed these specifications. A Bidder's proposal must accompany the Bid, not just a letter placed with the specifications listing any exceptions, or a statement of "no exceptions to the specifications".
12. To ensure protection for the District, the Bidder shall carry second party products liability insurance with limits of a minimum of \$1,000,000.
13. The Bid shall include the date that on or before the PPE shall be delivered.
14. Use of the District's Bid Form is required.
15. The Bidder's proposal shall be in a sealed envelope, and must be clearly marked "PPE Bid" with the date and time of the Bid Opening. It is the Bidder's responsibility to assure that the bid is delivered to the District at 701 Vine Street, Kelso, Washington 98626 prior to the cutoff date and time. After the bid Opening, no changes to the bid prices or the provisions of the bid that may be prejudicial to the interest of the District shall be permitted.
16. ANTI-COLLUSION STATEMENT: By signing this bid, the Bidder agrees that this bid is made without any understanding, agreement or connection with

any other person, firm or corporation making a bid for the same purpose, and that their bid is in all respects fair and without collusion or fraud.

17. The PPE and items bid shall be new. The PPE and items bid shall not have been, nor be used for, demonstration, sales or other purposes not directly involving the District, without prior written permission from the District.
18. The contact person for questions regarding these specifications or this process shall be directed to:

Jennifer Olin or Jeremy Huff  
701 Vine Street  
Kelso, WA 98626  
360-575-6294 or 360-431-7874  
jennifer.olin@c2fr.org

19. The successful bidder will be responsible for assistance in determining the size and correct fit of PPE for each individual.

**BID FORM**

TO: COWLITZ 2 FIRE & RESCUE

We wish to submit for your consideration the following Bid for (48) Forty - Eight sets of Structural Fire Fighter Personal Protective Equipment, including bunker pants, bunker coats, helmets, boots, hoods, and gloves and other associated equipment as identified in the specifications. Additional sets may be purchased by other agencies. Said Specification is attached with compliance, equals and exceptions noted for each individual item. Equals and exceptions are listed on attachments to the Specification. Pricing contained on this Bid Form is inclusive of State Sales Tax, and is inclusive of all monetary obligations by the District to the Bidder.

<u>ITEM/PRODUCT</u>	<u>QTY</u>	<u>PRICE PER ITEM</u>	<u>FREIGHT ESTIMATE*</u>	<u>TOTAL**</u>
Coat and pant PBI Matrix 60/40	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Coat and pant Advance ultra black gold	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Boots	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Helmet	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Hood	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Gloves	<u>48</u>	\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Bid Sub-Total		\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
Sales Tax (7.9% for Kelso WA)		\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>
GRAND TOTAL		\$ <u>                    </u>	\$ <u>                    </u>	\$ <u>                    </u>

\* F.O.B. = Kelso WA

\*\*Does not include sales tax

Payment terms for this Bid as quoted: \_\_\_\_\_

PPE to be Manufactured By: \_\_\_\_\_

Factory Location: \_\_\_\_\_

Model Quoted: \_\_\_\_\_

Delivery shall be within \_\_\_\_\_ calendar days after the award of the Bid.

Bid Form Page 2

I hereby certify that this Bid as submitted by this company is for (48) Forty - Eight sets of Structural Fire Fighter Personal Protective Equipment, including bunker pants, bunker coats, helmets, boots, hoods, and gloves and other associated equipment as identified in the specifications. meeting all the requirements as set forth in the Fire District Specification including the equipment specified, except for the exceptions or equals as indicated. The attached copy of the Specifications and attached list of exceptions shall be considered the accurate description of the PPE we bid, and shall become binding if the Bid is awarded to this company.

Bidding Company: \_\_\_\_\_

Name of Bidder (Print): \_\_\_\_\_

Signature of Bidder: \_\_\_\_\_

**Bidder's Affidavit**  
**This form is to be returned with the Bid.**

NAME OF BIDDER: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY, STATE, ZIP CODE: \_\_\_\_\_

I, \_\_\_\_\_ as \_\_\_\_\_,

affirm that the following answers and facts are true, and that our proposal complies with all the instructions, requirements, and specifications contained in the specification except where indicated below:

1. A full-time local representative of the manufacturer is maintained: Yes \_\_\_ No \_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

2. All pages of the Bid Package have been received and reviewed. Yes \_\_\_ No \_\_\_

3. The Bidder has completed all the questions and filled in the blanks in the specifications. Yes \_\_\_ No \_\_\_

4. The Bidder complies with the Purchaser's specifications without exceptions. Yes \_\_\_ No \_\_\_

5. The proposed equipment complies with the dimensional requirements of the specifications. Yes \_\_\_ No \_\_\_

6. The manufacturer maintains an established local Service Center and Parts Department. If not, where is the closest one located? Yes \_\_\_ No \_\_\_

\_\_\_\_\_

8. All specified warranties are included with the proposal. Yes \_\_\_ No \_\_\_

9. All proposed warranties are in compliance with the specifications. Yes \_\_\_ No \_\_\_

10. The proposed equipment is new in all respects. Yes \_\_\_ No \_\_\_

11. Have you included a copy of your own detailed Bidder's specifications? **Yes** \_\_\_ **No** \_\_\_
12. Have you included a separate list of exceptions? **Yes** \_\_\_ **No** \_\_\_
13. Are you taking total exception to these specifications? **Yes** \_\_\_ **No** \_\_\_
14. All components included comply with the recommendations of the NFPA. **Yes** \_\_\_ **No** \_\_\_
15. The manufacturer meets all specified criteria and code conformances. **Yes** \_\_\_ **No** \_\_\_
16. A factory trained technician shall assist with fitting personnel in the use and maintenance of all components of the PPE. **Yes** \_\_\_ **No** \_\_\_
17. Delivery of the equipment shall take place within \_\_\_\_\_ calendar days after execution of the contract.
18. Bids shall be subject to chapter 39.34 RCW, the Inter-local Cooperation Act, under which other governmental agencies may purchase through the bid proposal accepted by the Purchaser. **Yes**\_\_\_\_\_ **No**\_\_\_\_\_

**GENERAL SPECIFICATIONS PPE  
PROTECTIVE JACKET AND TROUSERS  
FOR STRUCTURAL FIRE FIGHTING**

**SCOPE**

This specification details design and materials criteria to afford protection to the upper and lower body, excluding head, hands, feet, against adverse environmental effects during structural fire fighting. All materials and construction will meet or exceed NFPA Standard #1971 (2007 revision) and OSHA for structural fire fighters protective clothing.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**OUTER SHELL MATERIAL - JACKETS AND TROUSERS**

The outer shell shall be constructed of TENCATE "ADVANCE ULTRA™" 60/20/20 Kevlar®/Nomex®/PBO blend material with an approximate weight of 7.5 oz. per square yard in a rip stop weave. Color of garments to be black gold. With option of PBI Matrix 60/40 gold

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**THERMAL INSULATING LINER - JACKET AND TROUSERS**

The thermal liner shall be constructed of 7.6 oz. per square yard TENCATE "CALDURA® SL2"; one layer of 1.5 oz. and one layer of 2.3 oz. per square yard E-89™ spunlaced Nomex®/Kevlar® aramid blend, quilt stitched to a 3.8 oz. per square yard combination spun/filament Caldura® face cloth with Wickwell™ Plus finish. A 7 inch by 9 inch pocket, constructed of self material and lined with moisture barrier material, shall be affixed to the inside of the jacket thermal liner on the left side by means of a lock stitch.. The thermal liner shall be attached to the moisture barrier and bound together by bias-cut Neoprene coated cotton/polyester around the perimeter. **Or** 3.5 oz./sq. yd. "GLIDE" (NOMEX® filament/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 +/- 7.3 oz./sq. yd.).

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

## **MOISTURE BARRIER - JACKETS AND TROUSERS**

W.L. GORE “**CROSSTECH® Type 2C**” moisture barrier material shall be a 5.0 oz. per square yard two-layer laminate comprised of a bicomponent membrane and a 3.2 oz. per square yard Nomex® IIIA woven pajama check substrate. The bicomponent membrane shall be comprised of an expanded PTFE (polytetrafluoroethylene, for example Teflon) matrix having a continuous hydrophilic (i.e. water loving) and oleophobic (i.e. oil hating) coating that is impregnated into the matrix. The moisture barrier material shall meet all moisture barrier requirements of NFPA 1971-2007 edition, which includes water penetration resistance, viral penetration resistance, and common chemical penetration resistance. The moisture barrier shall be sewn to the thermal liner and bound along the edges with bias-cut Neoprene-coated cotton/polyester binding. Further mention of “Specified Moisture Barrier” in this specification shall refer to this section.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **SEALED MOISTURE BARRIER SEAMS**

All moisture barrier seams shall be sealed with a minimum 1 inch wide sealing tape. One side of the tape shall be coated with a heat activated glue adhesive. The adhesive side of the tape shall be oriented toward the moisture barrier seam. The adhesive shall be activated by heat and the sealing tape shall be applied to the moisture barrier seams by means of pressure exerted by rollers for that purpose.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **METHOD OF THERMAL LINER/MOISTURE BARRIER ATTACHMENT FOR JACKETS AND TROUSERS**

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of 5/8 inch wide flame resistant Velcro® hook and loop fastener tape shall secure the thermal liner/moisture barrier to the outer shell along the length of the neck line under the collar. The remainder of the thermal liner/moisture barrier shall be secured with a minimum of four snap fasteners appropriately spaced on each jacket facing, two snap fasteners at the hem, and two snap fasteners at each sleeve end. The thermal liner and moisture barrier shall be completely removable from the trouser shell. Nine snap fasteners shall be spaced along the waistband to secure the thermal liner/moisture barrier to the shell. The legs of the thermal liner/moisture barrier shall be secured to the shell by means of two snap fasteners per leg.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **THERMAL PROTECTIVE PERFORMANCE**

The assembled garment, consisting of an outer shell, moisture barrier and thermal liner, shall exhibit a TPP (Thermal Protective Performance) rating of not less than 35.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **STITCHING**

The outer shell shall be assembled using NFPA approved stitching. The thermal liners and moisture barriers shall be assembled using NFPA approved stitching. Stitching in all seams shall be continuous. There shall be no joined stitching in midseam. All major A outer shell structural seams, major B structural liner seams, shall have a minimum of 8 to 10 stitches per inch.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **JACKET CONSTRUCTION**

### **BODY**

Shall meet or exceed NFPA 1971 standard

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **SIZING**

The jacket length shall be measured from the juncture of the collar and back panels to the hem of the jacket and shall measure 29 inches in the front/33 inches long in the back. (standard)

The jacket shall be available in male and female patterns in even size chest measurements of two inch increments, and shall range from a small size of 30 to a large size of 68. Generalized sizing, such as small, medium, large, etc., will not be considered acceptable.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **DRAG RESCUE DEVICE (DRD)**

A Firefighter Drag Rescue Device shall be installed in each jacket that meets or exceeds NFPA 1971 standard.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **LINER ACCESS OPENING - JACKET**

The liner system of the jacket shall incorporate an opening at the leading edge of the left front. This opening shall run approximately 10 inches along the perimeter for the purpose of inspecting the integrity of the jacket liner system. When installed into the outer shell the Liner Access Opening will be covered and protected by the overlap of the outer shell facing.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

### **RETROREFLECTIVE FLUORESCENT TRIM**

The retro-reflective fluorescent trim shall be lime/yellow 3M Scotchlite™ Triple Trim (L/Y borders with silver center).

Each jacket shall have an adequate amount of retro-reflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of NFPA #1971 (2007 edition) and OSHA. The trim shall be in the following widths and shall be NYC style; 3 inch wide stripes - around each sleeve below the elbow, around each sleeve above the elbow, around the bottom of the jacket within approximately 1 inch of the hem, around the back and chest area approximately 3 inches below the armpit,.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

### **REINFORCED TRIM STITCHING**

All reflective trim is secured to the outer shell with Nomex® thread, using a locking chainstitch. All trim ends shall be securely sewn into a seam for a clean finished appearance.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

### **COLLAR & FREE HANGING THROAT TAB**

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.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

## JACKET FRONT

The jacket shall incorporate separate facings to ensure there is no interruption in thermal or moisture protection in the front closure area. The facings shall measure 2½ inches wide, extend from collar to hem, and be double stitched to the underside of the outer shell at the leading edges of the front body panels. A breathable moisture barrier material shall be sewn to the jacket facings and configured such that it is sandwiched between the jacket facing and the inside of the respective body panel. The breathable film side shall face inward to protect it. Jackets that use “false facings” shall be considered unacceptable. The thermal liner and moisture barrier assembly shall be attached to the jacket facings by means of snap fasteners.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

## STORM FLAP

A rectangular storm flap measuring 3¼ inches (6 inches for hook & dee inside/FR Velcro® outside closure) wide and 24 inches long shall be centered over the left and right body panels to ensure there is no interruption in thermal or moisture protection in the front of the jacket. The outside storm flap shall be constructed of two plies of outer shell material with a center ply of breathable moisture barrier material. The outside storm flap shall be double stitched to the right side body panel and shall be reinforced at the top and bottom with backtacks.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

## STORM FLAP AND JACKET FRONT CLOSURE SYSTEM

The jacket shall be closed by means of **(zipper and FR Velcro)**. A 22 inch size #10 heavy duty high-temp smooth-gliding zipper on the jacket fronts and flame resistant Velcro® fastener tape on the storm flap. The teeth of the zipper shall be mounted on black Nomex® tape and shall be sewn into the respective jacket facings. The storm flap shall close over the left and right jacket body panels and shall be secured with flame resistant Velcro® fastener tape. A 1½ inch by 24 inch piece of FR Velcro® loop fastener tape shall be installed along the leading edge of the storm flap on the underside with four rows of stitching. A corresponding 1½ inch by 23 inch piece of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the front body panel and positioned to engage the loop fastener tape when the storm flap is closed over the front of the jacket.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

## **SEMI-EXPANSION (BELLOWS) POCKETS**

Each coat front body panel shall have a 8 inch wide by 8 inch high semi-expansion pocket double stitched to it and shall be located to provide accessibility. The leading edge of the pockets shall be sewn flush with the coat. The rear of the pockets shall expand to a depth of 2 inches. The lower half of each semi-expansion pocket shall be reinforced with a layer of Kevlar® on the inside. Two rust resistant metal drain eyelets shall be installed in the bottom of each semi-expansion pocket to facilitate drainage of water. The pocket flaps shall be constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The pocket flaps shall be angled with the front edge 1” shorter than the back edge, the upper pocket corners shall be reinforced with proven backtacks, and pocket flaps shall be reinforced with bartacks. The pocket flaps shall be closed by means of flame resistant Velcro® hook and loop fastener tape. Two pieces of 1½ inch by 3 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3 inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape. Additionally, a separate hand warmer pocket compartment will be provided under the expandable cargo pocket. This compartment will be accessed from the rear of the pocket and shall be lined with Nomex® fleece for warmth and comfort.

\_\_\_\_\_ Comply      \_\_\_\_\_ Exception

## **RADIO POCKET**

Each jacket shall have a pocket designed for the storage of a portable radio. This pocket shall be of box type construction, double stitched to the coat, and shall have one rust resistant metal drainage eyelet in the bottom of the pocket. The pocket flap shall be constructed of two layers of outer shell material measuring approximately 5 inches deep and ¼ inch wider than the pocket. The pocket flap shall be closed by means of flame resistant Velcro® hook and loop fastener tape. A 1½ inch by 3 inch piece of FR Velcro® hook fastener tape shall be installed vertically on the inside of the pocket flap beginning at the center of the bottom of the flap. A 1½ inch by 3 inch piece of FR Velcro® loop fastener tape shall be installed horizontally on the outside of the pocket near the top center and positioned to engage the hook fastener tape. In addition, the entire inside of the pocket shall be lined with neoprene coated cotton/polyester impermeable barrier material to ensure that the radio is protected from the elements. The moisture barrier material shall also be sandwiched between the two layers of outer shell material in the pocket flap for added protection. The radio pocket size and location shall be determined at time of order

\_\_\_\_\_ Comply      \_\_\_\_\_ Exception

### **MICROPHONE STRAP**

A strap shall be constructed to hold a microphone for a portable radio. It shall be sewn to the coat at the ends only. The microphone strap shall be mounted above the radio pocket and shall be constructed of double layer outer shell material.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **"SURVIVOR" FLASHLIGHT HOLDER**

Each jacket shall be equipped with a "Survivor" flashlight holder. An inward facing metal safety hook/coat snap shall be triple riveted in a vertical position to the upper chest. The inward facing snap hook will accommodate the clip portion of the flashlight. Below the coat hook will be a strap constructed of outer shell material measuring approximately 2½ inches high and 9 inches wide, and will hold the barrel of the flashlight. The lower strap will be equipped with a 1½ inch by 2½ inch flame resistant Velcro® hook and loop closure at the front of the strap to facilitate easy removal of the flashlight. There shall be approximately 3 inches between the upper snap hook and lower strap. The "Survivor" flashlight holder location shall be determined at time of order.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **SLEEVES**

The sleeve shall have an insert throughout all layers that shall provide a natural bend in the sleeve. This elbow shall include cut outs, shaped pieces, and darts to create free movement with few restrictions. The elbow shall have an insert throughout all layers that shall provide a natural bend in the sleeve. This elbow shall include shaped pieces and darts to create free movement with few restrictions. The insert shall consist of two layers of outer shell material for abrasion resistance and thermal protection.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **SLEEVE CUFF REINFORCEMENTS**

The sleeve cuffs shall be reinforced with a layer of black Dragonhide, arashield or self material. The cuff reinforcements shall not be less than 3 inches in width and folded in half, approximately one half inside and one half outside the sleeve end for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the sleeve end. This independent cuff provides an additional layer of protection over a turned and stitched cuff. Coats finished with a turned and stitched cuff do not provide the same level of abrasion resistance and will be considered

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

**WRISTLETS / SLEEVE WELLS**

Each jacket shall be equipped with Nomex<sup>®</sup> knit wristlets not less than 4 inches in length and of double thickness. The wristlets shall be sewn to a piece of self material leader that is then stitched into the cuff. Flame resistant Neoprene coated cotton/polyester impermeable barrier material will be sewn to the thermal liner sleeve from the cuff to 6" up the sleeve between the thermal and moisture barrier layers. Two Nomex<sup>®</sup> snap tabs will be sewn into the juncture of the sleeve well and wristlet. The tabs will be spaced equidistant from each other and shall be fitted with female snap fasteners to accommodate corresponding male snap tabs sewn onto the liner sleeves. This configuration will ensure there is no interruption in protection between the sleeve liner and wristlet.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**NAME PLATE WITH LETTERING**

Contoured hanging patch attached to the inside back at hem with 1.5" hook & loop and snaps. Lime/yellow Scotchlite letters for fire fighter's LAST name sewn to hanging patch

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**LINER ELBOW THERMAL ENHANCEMENT**

Meet or exceed NFPA 1971 standard

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**LINER SHOULDER THERMAL ENHANCEMENT**

Meet or exceed NFPA 1971 standard

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**FRONT AND UPPER BACK REINFORCEMENT**

Meet or exceed NFPA 1971 standard

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**TROUSER CONSTRUCTION**

**BODY**

Meet or exceed NFPA 1971 standard

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

### **LINER ACCESS OPENING (TROUSER)**

The combined moisture barrier and the thermal liner shall be completely removable for the pant. The thermal liner and moisture barrier layers of the liner system shall be stitched together and bound around the top waist and cuffs with Bias-Cut Neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants. The liner system shall have a reinforcement of black Nomex® Twill sewn to the bottom of the fly opening. This reinforcement will serve to prevent the liner from tearing in that area from the constant donning and doffing of the trousers.

The liner system of the trouser shall incorporate an opening at the right side of the waist, a minimum of 11 inches, for the purpose of inspecting the integrity of the trouser liner system.

\_\_\_\_\_Comply          \_\_\_\_\_Exception

### **SIZING**

The trousers shall be available in even size waist measurements of two inch increments and shall be available in a range of sizes from 24 to 68. The trouser inseam measurement shall be available in two inch increments. Generalized sizing, such as small, medium, large, etc., will not be considered acceptable. Sizing specifically for women shall also be available.

\_\_\_\_\_Comply          \_\_\_\_\_Exception

### **RETRO-REFLECTIVE FLUORESCENT TRIM**

The trousers shall have a stripe of retro-reflective fluorescent trim encircling each leg below the knee to comply with the requirements of NFPA #1971 (2007 revision) in 3 inch lime/yellow 3M Scotchlite™ Triple Trim (L/Y borders with silver center).

\_\_\_\_\_Comply          \_\_\_\_\_Exception

### **REINFORCED TRIM STITCHING**

All reflective trim is secured to the outer shell with Nomex® thread, using a locking chain stitch. All trim ends shall be securely sewn into a seam for a clean finished appearance.

\_\_\_\_\_Comply          \_\_\_\_\_Exception

## **WAISTBAND**

The waist area of the trousers shall be reinforced on the inside with a separate piece of black aramid outer shell material not less than two inches in width. Neoprene coated cotton/polyester shall be sewn to the back of the waistband as a reinforcement to create a three-layer protection. The top edge of the waistband reinforcement shall be double stitched to the outer shell at the top of the trousers. The lower edge of the waistband shall be serged and unattached to the shell to accept the thermal liner and moisture barrier. The top of the thermal liner and moisture barrier shall be secured to the underside of the waistband reinforcement so as to be sandwiched between the waistband reinforcement and outer shell to reduce the possibility of liner detachment while donning and to avoid pass through of snaps from the outer shell to the inner liner. The independent waistband construction affords greater comfort and fit than a turned and stitched method. Trousers that do not include an independent waistband only serve to save the manufacturer both money and labor and shall be considered unacceptable.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **KEVLAR® BELT WITH BELT LOOPS**

Each pant shall include a 2" wide belt constructed of Kevlar® webbing material with an adjustable hi-temp thermoplastic Delrin buckle serving as the exterior primary positive locking closure. This buckle shall also provide a quick-release mechanism for donning and doffing. The pants shall be equipped with a series of approximately 3 inch by 3 inch outer shell material belt loops spaced around the waist to accommodate the Kevlar® belt.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **EXTERNAL / INTERNAL FLY FLAP**

The trousers will have a vertical outside fly flap constructed of two layers of outer shell material, with a layer of moisture barrier material sandwiched between. The fly flap shall be double stitched to the left front body panel and shall measure approximately 2 ½ inches wide by 9½ inches long and reinforced with bar tacks at the base. An internal fly flap constructed of one layer of outer shell material, thermal liner and specified moisture barrier, measuring approximately 2 inches wide by 9½ inches long, shall be sewn to the leading edge of the right front body panel. The inside of the right front body panel shall be thermally enhanced directly under the outside fly with a layer of moisture barrier and thermal liner material.

The underside of the outside fly flap shall have a a heavy duty zipper and 1½ inch wide by full length flame resistant hook and loop fastener tape. The teeth of the zipper shall be mounted on Nomex® cloth and shall be sewn into the leading edges of the respective left and right front body panels from the crotch area to the waist band. Flame resistant hook and loop fastener tape shall close the flap. The FR

loop portion shall be sewn with four rows of stitching to the inside of the leading edge of the external fly flap. The corresponding portion of FR hook fastener tape shall be sewn with four rows of stitching to the right front body panel positioned to engage the loop portion when the external fly flap is in the closed position.

Appropriate male and female snap fastener halves shall be installed at the leading edge of the waistband for the purpose of further securing the trousers in the closed position.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**KNEE**

The knee shall have an insert throughout all layers that shall provide a natural bend in the leg. This knee shall include cut outs, shaped pieces, and darts to create free movement with few restrictions. The insert shall consist of polymer coated aramid black for abrasion resistance and thermal protection.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**LINER KNEE THERMAL ENHANCEMENT**

An additional layer of specified thermal liner and neoprene coated impermeable barrier material will be sewn to the knee area of the liner system for added protection and increased thermal insulation at contact points. The knee thermal enhancement layers shall be sandwiched between the thermal liner and moisture barrier layers of the liner system and shall be stitched to the thermal liner layer only.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**KNEE REINFORCEMENTS**

The knee area shall be reinforced with a layer of black Dragonhide or arashield material. The knee reinforcement shall be slightly offset to the outside of the leg to insure proper coverage when bending, kneeling and crawling.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**PADDING UNDER KNEE REINFORCEMENTS**

Padding for the knees shall be accomplished with one layer of **Silizone™** foam or be padded using one layer of uninterrupted 1/8" thick, fire retardant closed-cell foam sandwiched between the shell and the knee reinforcement layers.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

## **EXPANSION POCKETS**

An expansion pocket, measuring approximately 2 inches deep by 8-10 inches wide by 8-10 inches high shall be double stitched to the side of each leg straddling the outseam above the knee and positioned to provide accessibility. The lower half of each expansion pocket shall be reinforced with a layer of Kevlar material on the inside. Two rust resistant metal drain eyelets shall be installed on the underside of each expansion pocket to facilitate drainage of water. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and shall measure 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The pocket flaps shall be closed by means of flame resistant Velcro® hook and loop fastener tape. Two pieces of 1½ inch by 3 inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one piece on each end). Two corresponding pieces of 1½ inch by 3 inch FR Velcro® loop fastener tape shall be installed horizontally on the outside of each pocket near the top (one piece on each end) and positioned to engage the hook fastener tape.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **TROUSER CUFF REINFORCEMENTS**

The cuff area of the trousers shall be reinforced with black Dragonhide or arashield material. The cuff reinforcements shall not be less than 3 inches in width and folded in half, approximately one half inside and one half outside the sleeve end for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the end of the leg for a total of four rows of stitching. This independent cuff provides an additional layer of protection over a hemmed cuff. Trousers that are turned and stitched at the cuff, as opposed to independent cuff reinforcement, do not provide the same level of abrasion resistance and shall be considered unacceptable.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

## **PADDED RIP-CORD SUSPENDERS & ATTACHMENT**

On the inside waistband shall be attachments for the standard "H" style "Padded Rip-Cord" suspenders. There will be four attachments total – 2 front, 2 back. The suspender attachments shall be constructed of a double layer of black Nomex® measuring approximately ½ inch wide by 3 inches long. They shall be sewn in a horizontal position on the ends only to form a loop. The appearance will be much like a horizontal belt loop to capture the suspender ends.

A pair of "H" style "Padded Rip-Cord" suspenders shall be specially configured for use with the trousers. The main body of the suspenders shall be constructed of 2 inch wide black strap webbing. The suspenders shall run over each shoulder to a point approximately shoulder blade high on the back, where they shall be joined by a 2 inch wide horizontal piece of webbing measuring approximately 8-inches long,

forming the "H". This shall prevent the suspenders from slipping off the shoulders. The shoulder area of the suspenders will be padded for comfort by fully encasing the webbing with aramid batting and wrap-around black Nomex®.

The rear ends of the suspenders will be sewn to 2-inch wide elasticized webbing extensions measuring approximately 8-inches in length and terminating with thermoplastic loops. The forward ends of the suspender straps shall be equipped with specially configured black powder coat non-slip metal slides. Through the metal slides will be the 9 inch lengths of strap webbing "Rip-Cords" terminating with thermoplastic loops on each end. Pulling on the "Rip-Cords" shall allow for quick adjustment of the suspenders.

Threaded through and attached to the thermoplastic loops on the forward and rear ends of the suspenders will be black Nomex® suspender attachments incorporating two snap fasteners. The Nomex® suspender attachments are to be threaded through the suspender attachment loops on the inside waistband of the trousers. The Nomex® suspender attachments will then fold over and attach to themselves securing the suspender to the trousers.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **REVERSE BOOT CUT**

The outer shell trouser leg cuffs will be constructed such that the back of the leg is approximately 1 inch shorter than the front. The liner will also have a reverse boot cut at the rear of the cuff and a concave cut at the front to keep the liner from hanging below the shell. This construction feature will minimize the chance of premature wear of the cuffs and injuries due to falls as a result of "walking" on the trouser cuffs. Trousers that have "cut-outs" in the back panel rather than a contoured boot cut shall be considered unacceptable.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **THIRD PARTY TESTING AND LISTING PROGRAM**

All components used in the construction of these garments shall be tested for compliance to NFPA Standard #1971 (2007 revision) by Underwriters Laboratories (UL). Underwriters Laboratories shall certify and list compliance to that standard. Such certification shall be denoted by the Underwriters Laboratories certification label.

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

### **LABELS**

Appropriate warning label(s) shall be permanently affixed to each garment. Additionally, the label(s) shall include the following information.

Compliance to NFPA Standard #1971 - 2007 edition  
Underwriters Laboratories classified mark  
Manufacturer's name  
Manufacturer's address  
Manufacturer's garment identification number  
Date of manufacture  
Size  
Fiber contents

\_\_\_\_\_Comply                      \_\_\_\_\_Exception

**ISO CERTIFICATION / REGISTRATION**

The protective clothing manufacturer shall be certified and registered to ISO Standard 9001 to assure a satisfactory level of quality. Indicate below whether the manufacturer is so certified and registered by checking either "Yes" or "No" in the space provided.

\_\_\_\_\_Yes                      \_\_\_\_\_No

**WARRANTY**

The manufacturer shall warrant these jackets and trousers to be free from defects in materials and workmanship for their serviceable life when properly used and cared for.

\_\_\_\_\_Yes                      \_\_\_\_\_No

**EXCEPTIONS TO SPECIFICATIONS**

**Any and all exceptions to the above specifications must be clearly stated for each heading. Use additional pages for exceptions, if necessary.**

**COUNTRY OF ORIGIN**

The Garments shall be manufactured in the United States.

\_\_\_\_\_Yes                      \_\_\_\_\_No

**SIZING BY VENDOR**

Both male and female sizing samples shall be available.

\_\_\_\_\_Yes                      \_\_\_\_\_No

## **SPECIFICATIONS FOR STRUCTURAL FIREFIGHTING HELMETS USTM TRADITIONAL SERIES**

### **GENERAL**

Helmets for Structural Firefighting shall meet or exceed NFPA 1971 Standard on Protective Ensemble for Structural Fire Fighting 2007 Edition (Pertaining to Structural Fire Helmets). Certification/verification shall be furnished by written documentation supplied by a recognized independent third party test laboratory.

Helmets conforming to this specification are designed to help protect the firefighter from head and neck injuries related to structural firefighting activities.

The helmet manufacturer shall be a certified ISO 9001 company to assure quality procedures and production capabilities.

### **WARRANTY**

Manufacturer shall warrant to the original purchaser that the entire helmet (excluding faceshield or goggles) shall be free of defects in material and workmanship, under normal use and service, for a period of two years from the date of manufacture.

### **PHYSICAL CONFIGURATION**

The basic helmet shall be a flared, rear-brim design with a length of 15-5/8", a width of 12-1/4" (at the faceshield hardware) and a height of 7".

### **SHELL**

The helmet shell shall be of Traditional style with 4 primary and 4 secondary ribs bisecting the dome. The shell shall be comprised of a composite fiberglass with a thermoset resin. Color pigment shall be added to the resin as part of the manufacturing process that molds the helmet to help maintain appearance by masking chips and scratches that might occur in daily wear and tear. The shell finish shall be a non-glossy, "matte" style and shall be available in yellow, red, and black.

The edge of the composite shell shall have an aluminum reinforced, elastomeric edge beading that is secured at the rear of the brim by a stainless steel clip and D-ring fastened by a stainless steel rivet. The edge beading shall not melt, drip or ignite when tested to NFPA 1971-2007 for Heat Resistance requirement.

A stamped, embossed, brass sheet front shall be provided in the form of an eagle to be attached by two solid brass bolts and nuts. The beak of the eagle shall be formed to hold the top of a leather identification shield. Two brass, support arms shall fork and extend downward from the eagle head 3-1/2" from the tip of the eagle beak to form the lower supports for attachment of the leather identification shield. An arched, brass bar shall be attached to the two lower support arms of the eagle to form a cross bar support. An 8-32 threaded hole shall be provided at the lower support arms of the eagle to accept the two brass

screws which hold both the cross bar support and the leather identification shield.

### **IMPACT LINER SYSTEM**

The impact liner shall consist of a urethane foam liner glued to a black high-heat resistant inner shell with a heat deflection temperature > 254° F @ 264 psi. The urethane foam liner shall be formed without the use of CFC's to eliminate the potential for additional expansion when subjected to heat during actual use.

The black inner shell shall have four 1" x 2" pieces of adhesive-backed Velcro® hook material attached, two to each side, to secure the ear/neck protector at the sides of the inner shell.

### **CROWN STRAP SUSPENSION SYSTEM**

The crown strap suspension system shall be three 3/4" nylon web straps attached to 6 nylon keys. The keys shall be locked into the lip of the inner shell against the urethane impact liner. A fire retardant knit crown pad shall be placed in the center portion of the suspension for added comfort.

### **RATCHET HEADBAND**

The helmet shall have a quick-adjustment sizing capability by means of a ratchet adjustment system attached to a heat-resistant nylon headband. The headband shall be attached to the inner shell by four black acetyl buttons (two front, two rear). The headband shall have the ability to be raised or lowered inside of the inner shell by location points on the headband. This adjustment shall not affect the height of the helmet on the firefighter's head.

The ratchet portion of the headband shall have a ratchet height adjuster located at the rear of the headband, inside of the inner shell, to permit the ratchet to be positioned for comfort on the nape of the firefighter's head. This ratchet height adjuster shall permit at least 1" of travel by means of three height adjustment keys for proper fit. This independent adjustment component shall have a 3/4" piece of adhesive-backed Velcro hook material attached at the center rear of this component to secure the rear portion of the ear/neck protector.

### **BROW PAD**

The headband shall be supplied with a fire retardant (FR) cotton brow pad, backed with foam cushion padding material at the forehead, that is removable for laundering and replacement. Attachment to the headband with stitching will not be permitted. A leather brow pad option must also be available.

### **CHIN STRAP**

The chin strap shall be two pieces of 3/4" black Nomex® webbing with a super tough nylon quick release buckle and a chrome-plated postman's slide fastener.

The male side of the quick-release buckle shall be anchored to the right side of the outer shell with a dielectric anchor block secured to the faceshield mounting bracket with 2 stainless steel screws and 2 stainless steel acorn nuts. The long portion of the chin strap with the female side of the quick-release buckle and the postman's slide fastener shall be attached to the left side of the outer shell in the same manner.

When the chin strap is connected and fully extended, maximum length shall be at least 24" when measured from one anchor block to the opposite anchor block.

### **EAR/NECK PROTECTOR**

The ear/neck protector shall consist of a 6 oz. rip-stop Nomex outer shell backed with FR cotton flannel for comfort. A 1" strip of Velcro loop material shall be stitched in one continuous band across the top of the outer shell of the ear/neck protector for attachment to the inner shell.

When properly attached to the inner shell of the helmet, the ear/neck protector shall have the following minimum coverage to the sides and rear of the helmet brim:

1. 6" from the sides of the helmet brim at the chinstrap.
2. 6-1/2" from the center rear of the helmet brim.

### **FACESHIELD**

The face shield shall be a hard-coated PPC material .The face shield shall be certified to meet the optic requirements of ANSI Z87.1 2003 Standard for Eye and Face Protection. This certification shall meet NFPA 1971 requirements for heat and impact performance.

### **RETRO-REFLECTIVE TRIM**

The outer shell shall have 8 pentagon-shaped, fluorescent lime-yellow, retro-reflective markings equidistantly located around the circumference of the dome. The reflective materials shall be glass bead based to maximize the resistance to heat exposure experienced in firefighting. Vinyl based reflective materials will not be considered equal.

### **FLAME RESISTANT FIRE FIGHTING HOOD**

### **SPECIFICATION FOR STYLE 3049298 CARBON SHIELD □ ULTIMATE HOOD**

#### **FABRIC:**

- Both outer shell and lining are a blend of Carbon/High Strength Aramid-approximately 6.5 oz sq yd.

- 1 x 1 rib knit fabric - knit to allow approx. 200% stretch for maximum stretch and recovery.
- Calendared to minimize laundry shrinkage.

### STITCH TYPES AND SEAMS:

- All stitching conforms to Federal Standard 751 Specifications (FED-STD-751).
- Major seams are flat seam assembled, stitch type 607.
- Elastic in face opening is serged in with stitch type 503 and reinforced with bottom cover-stitch, stitch type 406.
- Bound bottom is cover-stitched with 406 stitch type.

### THREAD:

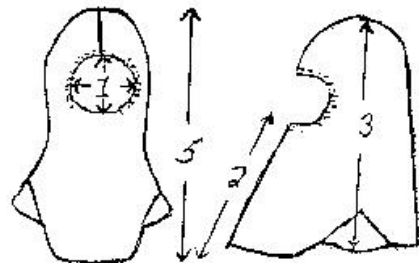
- All seams are sewn with 100% Nomex thread size 45/3.

### CONSTRUCTION:

- Composed of two layers throughout.
- For a contoured fit the hood is seamed from top of face opening to bottom back.
- Face opening is circular in shape and serged with x-heavy duty ½" wide elastic around the perimeter. The elastic is then folded back ½" and cover stitched. The face opening stretches a full 16" (which is 25% more than conventional hoods) for easy donning and a snug fit around face of SCBA mask. Face opening maintains original shape after repeated launderings.
- The bottom edge of hood is bound with self-material bias binding.
- Gusset added at side seams to provide complete shoulder coverage and smoother drape.

### FINISHED HOOD MEASUREMENTS:

- (1) Face opening is circular and measures between 4.6" to 5.6" in diameter.
- (2) Length of hood below face opening approx. 12¼".
- (3) Length of hood at side from top to bottom approx. 16¾".
- (4) Length of hood at back from top to bottom approx. 19½".
- (5) Length of hood at front top to bottom approx. 20".



### SIZE:

- One size hood fits all.

**LABELING AND USER INFORMATION:**

- Each hood is clearly labeled to identify material contents, NFPA acceptance, UL Classification, Date of Manufacture, Warning Statement and Care Instructions. Included with each hood is a complete users information guide.

**MEETS OR EXCEEDS INDUSTRY STANDARDS:**

- UL classified to meet or exceed NFPA 1971-2007 Edition; European standard 13911-June 2008 (CE marked to EC directive 89/686/EEC); Compliant with CAL-OSHA, Sections 3406 and 3410(d) and OSHA Rule 29 CFR, Part 1910, 269; Compliant with NFPA 70E 2004 Edition and meets performance specifications of ASTM-F-1506. ARC Rating: 23.3 Hazard / Risk Category: 2.

**SPECIFICATIONS FOR STRUCTURAL FIRE FIGHTING 14” PULL-ON BOOTS**

**NFPA 1971 AND NFPA 1992 COMPLIANT**

Meets or exceeds NFPA 1971, *Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting, 2007 Edition* for Structural Fire Fighting and NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies, 2005 Edition*.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**GENERAL DESIGN**

14” Pull-On athletic footwear (cement construction) boot, black flame-resistant and waterproof leather, double-stitched leather joining seams, hi-vis yellow and silver reflective trim, leather pull straps, padded leather collar, padded leather flex joints in the shaft above vamp and heel, liquid and chemical resistant breathable bootie liner, cut-resistant and thermal protective bootie-shield liner, composite safety toe cap, composite shank, composite penetration-resistant insole barrier, molded shin guard, flame-resistant synthetic rubber molded cup outsole and toe bumper, 3D lasting board, molded heel counter, internal heel fit system, and removable molded footbeds including a second thicker pair.

\_\_\_\_\_ Comply                      \_\_\_\_\_ Exception

**SLIP RESISTANCE**

Boots must exceed the minimum test values for slip resistance of left and right foot as detailed below to provide superior performance in dry, wet, and frosted rough ice conditions. Boots that do not exceed these minimums in all conditions will not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing that the boots bid meet this requirement.

Test Method: SATRA TM144:2007

Slip Resistance of Footwear and Floorings

Load = 500 N

Clay Quarry Tiles: Heel Dry = 1.00

Heel Wet = 0.80

Forepart Dry = 1.10

Forepart Wet = 0.80

Frosted Rough Ice: Heel = 0.30

Forepart = 0.35

\_\_\_\_\_ Comply          \_\_\_\_\_ Exception

**FLEXIBILITY**

Boots must reach the Maximum Flex Angle of 50 degrees without exceeding the critical bending moment with a resulting stiffness Index not to exceed 10.0 as detailed below to provide maximum flexibility. Boots that do not meet this requirement will not be acceptable. Bidders must promptly supply a Technical Services Report from a recognized independent testing laboratory upon request showing that the boots bid meet this requirement.

Test Method: SATRA TM194:2004

Longitudinal stiffness of footwear

\_\_\_\_\_ Comply          \_\_\_\_\_ Exception

**FIRESTORM LEATHER**

Heavy-duty, flame-resistant and waterproof full-grain cattle hide leather measuring 2.0 – 2.2 mm of thickness for durable tear and puncture resistance. Tumbled full-grain cattle hide leather in collar and flex areas for mobility. Leather is chrome tanned to withstand high temperature with minimal shrinkage, re-tanned to impart water resistance and low water absorption, and finished to retain maximum breathability. Leather meets or exceeds the following physical tests:

Water Penetration	ASTM D2009	15,000 flex minimum
Dynamic Water Absorption	ASTM D2009	10% maximum
Static Water Absorption	ASTM D6015	30% maximum
Slit Tearing Strength	ASTM D2212	30 pound minimum
Moisture Vapor Transmission	ASTM D5052	350 g/meter <sup>2</sup> /24 hours minimum

Flame Resistance NFPA 1971 afterflame no more than 2.0 sec, not melt or drip, no burn through

\_\_\_\_\_Comply \_\_\_\_\_Exception

**BOOTIE-SHIELD LINER**

A protective bootie-shield of 65% NOMEX®, 35% KEVLAR® fiber stitchbonded non-woven batting weighing 4.0 oz/yd<sup>2</sup> is positioned between the leather shell and the CROSSTECH® moisture barrier bootie to provide abrasion and cut resistance and additional thermal protection. Boots that do not have an additional protective bootie-shield between the leather shell and the CROSSTECH® moisture barrier bootie will not be acceptable.

\_\_\_\_\_Comply \_\_\_\_\_Exception

**CROSSTECH® FOOTWEAR FABRIC**

A full-height bootie liner made from a package of Cambrelle®, 300g insulation, and CROSSTECH® moisture barrier to provide protection unmatched by any other waterproof, breathable barrier and as defined by the specified NFPA standards.

\_\_\_\_\_Comply \_\_\_\_\_Exception

**ATHLETIC FOOTWEAR (CEMENT) CONSTRUCTION**

Contoured outsoles are bonded to the bottom and sides of the upper using a 2-part cross-linking adhesive that forms a bond stronger than the materials it attaches. This attachment process is far more flexible than welted construction. Goodyear welt or direct attach construction methods are not be acceptable.

\_\_\_\_\_Comply \_\_\_\_\_Exception

**VIBRAM® SYNTHETIC RUBBER CONTOURED CUP OUTSOLE**

Molded synthetic rubber outsole wraps onto the upper for athletic shoe performance. Flame, abrasion, oil, acid, and slip resistant compound engineered for high-traction, cold-weather resistance, and durability. Siping lines cut into flat areas open up when flexed to provide additional traction on water and ice. Self-cleaning lugs and omni-direction tread pattern designed for superior performance in all terrains and when working on ladders.

\_\_\_\_\_Comply \_\_\_\_\_Exception

**LENZI® PUNCTURE PROTECTION**

High performance penetration protection made from multiple layers of HT ceramic fabric (PEOX blended with silicates). Far more flexible than a steel plate and doesn't transmit heat or cold. Exceeds NFPA standards for safety. Metal plates will not be acceptable.

\_\_\_\_\_Comply \_\_\_\_\_Exception

**3D COMPOSITE LASTING BOARD**

Boot uppers are lasted to a molded and contoured dual-density lasting board with a built-in flex zone in the forefoot and a torsionally stable heel.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**COMPOSITE SHANK**

Lighter than steel, doesn't transmit heat or cold, and springs back to shape better. Metal shank will not be acceptable.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**COMPOSITE SAFETY TOE CAP**

Lighter than steel and doesn't transmit heat or cold. Exceeds NFPA standards for safety. Metal toe caps will not be acceptable.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**MOLDED HEEL COUNTER**

A rugged heel counter is individually molded to fit each size perfectly.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**3D MOLDED SHIN GUARD**

Molded and padded polymer shin guard provides extra protection when you are working on a ladder.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**SYNTHETIC RUBBER TOE BUMPER**

Molded synthetic rubber toe bumper provides abrasion resistance when crawling. Cemented and 2-needle stitched to the vamp.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**3M SCOTCHLITE™ REFLECTIVE MATERIAL**

Flame-resistant fluorescent yellow and silver 3M SCOTCHLITE™ reflective material sewn to both sides of the shaft for added visibility.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**LEATHER PULL-STRAPS**

Leather pull-straps are securely attached to the leather uppers with box and cross stitching to keep them on for good. Pull strength must be a minimum of 120 lbs when tested with a single handle.

\_\_\_\_\_Comply      \_\_\_\_\_Exception

**INTERNAL FIT SYSTEM**

Anatomical foam insert wraps around the top and sides of the heel with an opening to fit and hold the back of the heel securely while cushioning the ankle.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**3D MOLDED FOOTBED**

Removable urethane foam footbeds are contoured to cradle and cushion the bottom of the foot and to provide arch support. Moisture-wicking and anti-microbial fabric top layer.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**CUSTOM FIT SYSTEM**

A second pair of 3D Molded Footbeds that are thicker in the forefoot is provided with every pair for a custom fit. This thicker footbed provides a snugger fit.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**SIZES**

Boots must be available in Men’s 5 – 12.5 (full and half sizes), 13 – 17 (full sizes only) in Medium, Wide, and X-Wide widths. Boots must also be available in a Wide Calf model in the same size range that will provide an additional 3 inches in circumference at the calf to fit those with larger calves. Boots must be available in Women’s 5 – 10 (full and half sizes) in Medium, Wide, and X-Wide widths.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**RESOLING SERVICE**

Boots must be able to be resoled at the factory with new outsoles as needed.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**COUNTRY OF ORIGIN**

Made in USA.

\_\_\_\_\_Comply            \_\_\_\_\_Exception

**GLOVES:** Shall be made to meet or exceed NFPA 1971 standard

**ORIGIN:** Made in U.S.A.

**SIZES:** XXS,XS, S, M, L, XL, J