
Detailed Technical Specifications
for
Protective Clothing for Structural Firefighting
Coat and Pant

San Antonio Fire Dept
315 S Santa Rosa Ave
Suite 2000
San Antonio, TX 78207

This specification dated August 12, 2013 supersedes, modifies and replaces all previous editions.

LEGAL RIGHT TO SPECIFY

The Fire Department (for the remainder of this section referred to as the "specifier") chooses to exercise its Legal Right to Specify as determined by the U.S. Supreme Court's affirmation of the decision handed down in the case of Whitten Corp. vs. Paddock, by the U.S. District Court of Massachusetts, the First Federal District Court, which in effect states:

- 1) That as trained professionals, specifiers make informed judgments on products that they feel best serve their needs. Also, that proprietary specifications (if chosen) DO NOT violate any antitrust laws. Technically, very few brands of material or equipment are exactly alike, and if the specifier wants to limit the specification to one source, he has the right to do so and enforce it.
- 2) Only the specifier has the responsibility and judgment for determining whether a proposed substitution is an "or equal".
- 3) That from start to finish in the purchasing process, only the specifier can ultimately decide if another desirable product is available in lieu of the specification.
- 4) Finally, that the courts concluded "the burden is on the supplier or manufacturer, who has NOT been specified, to convince the specifier that their product is equal for the purpose of a particular project".

The specifier has determined that this product specification shall represent the product to which all offerings shall be compared. Due to the fact that firefighting is an ULTRAHAZARDOUS, UNAVOIDABLY DANGEROUS activity, only trained Fire Department personnel with specific knowledge in the area of Personal Protective Equipment shall be allowed to make the final determining decision on the selection of the appropriate product to serve the Fire Department's needs.

SAN ANTONIO FIRE DEPT
PROTECTIVE CLOTHING FOR STRUCTURAL FIREFIGHTING
COAT AND PANT

8/12/2013

Date: August 12, 2013

1.0 PURPOSE AND SCOPE

This specification defines the minimum requirements for structural firefighter personal protective equipment (PPE) providing limited protection as defined by NFPA 1971, *Standard on Protective Ensemble for Structural Fire Fighting*, Latest Edition. In the absence of comment on a particular point, industry standard practice shall be presumed to prevail. Every exception to specifications must be clearly spelled out at the time of bid.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

2.0 UNITS OF MEASURE

Current NFPA standards applicable to this product specification express values for measurement requirements in SI (metric-based) units, followed by US (inch-pound) approximate equivalents in parentheses. For the convenience of the fire department, this product specification *reverses the order* and presents the more familiar US approximation first, followed by the SI requirement in parentheses.

3.0 CERTIFICATION

The manufacturer must certify that the garments proposed in its bid meet or exceed all requirements of NFPA 1971. The manufacturer must also list and label this product with Underwriters Laboratories Inc. (UL) or Safety Equipment Institute (SEI), as the third party certification organization prescribed in NFPA 1971. All certification testing and test preconditioning must have been performed by an ISO 17025-certified laboratory. UL, SEI or a UL Authorized Client Test Data Program laboratory will fulfill this requirement.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

The manufacturer shall be registered to ISO 9001, *Quality Management Systems – Requirements*, 2000.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

4.0 WARRANTY

The manufacturer must provide a lifetime warranty against defects in materials and workmanship with the bid package.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

5.0 PRODUCT COUNTRY OF ORIGIN

For liability reasons, garments must be manufactured in the United States of America or Canada by companies with their assets and incorporation within the United States of America or Canada.

Does Your Bid Comply With All Aspects Of This Section? Yes No

6.0 LABELING REQUIREMENTS

Labels shall be permanently and integrally printed onto materials that meet all the requirements for labels of NFPA 1971. The garment shall be clearly labeled to fully identify the material content of all three layers: outer shell, moisture barrier and thermal liner.

In addition, each separable outer shell component shall be labeled in an obvious location including the size, date of manufacturer and an individualized serial number and bar code that matches the corresponding garment liner.

Does Your Bid Comply With All Aspects Of This Section? Yes No

7.0 CARE INSTRUCTIONS

The manufacturer shall provide a user information guide for the garments, which complies with user information requirements of NFPA 1971. Topics shall include, but not necessarily be limited to: pre-use information, preparation for use, inspection frequency and details, don/doff, use consistent with NFPA 1500, maintenance and cleaning, and retirement and disposal criteria and considerations.

This document shall be packaged with each garment along with a specification summary sheet describing garment custom options, sizing and production details. This written information shall be in complete compliance with NFPA 1971 requirements, and shall reference same.

Does Your Bid Comply With All Aspects Of This Section? Yes No

8.0 TRACEABILITY PROGRAM

The manufacturer shall have in place a computer maintained traceability program that provides for the assignment of a production control number to each garment. The traceability program must be capable of tracing the garment through production, from the bolts of cloth used in all three layers of the garment composite construction, to the assignment of the garment to the individual firefighter. This production control number shall be visibly located on the garment label and on other protected areas of garment.

Does Your Bid Comply With All Aspects Of This Section? Yes No

9.0 PATENT CONSIDERATIONS

The Bidder, without exception, shall indemnify and save harmless the Purchaser and its employees from liability of any nature and kind, including cost and expenses for or on account of any copyrighted, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, including its use by the Purchaser. If the Bidder uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include all royalties or costs arising from the use of such design, device, or materials in any way involved in the work.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

10.0 SIZING

To ensure a perfect fit, sizing shall be determined by actual measurements taken of the firefighter by a trained measurement specialist, or sizing try-ons, or both. Sizing measurements shall be taken according to a schedule and location(s) mutually agreed between the manufacturer and the department.

Garments shall be available in custom sizing as follows: coat chest in 2-inch (5.1 cm) increments, coat sleeve in 0.5-inch (1.3 cm) increments, coat back length in 1-inch (2.5 cm) increments, pant waist in 2-inch (5.1 cm) increments and pant inseam in 1-inch (2.5 cm) increments. A full range of women's sizing, on women's patterns, must also be available. Each sleeve and inseam length shall provide 100% gradation from shoulder to wrist, and from hip to ankle, to provide proper fit for individual arm and leg lengths. Pattern tailoring to custom-fit neck, bicep, hip/seat and thigh circumferences must also be provided, when needed, at no additional charge. Neither Small-Medium-Large-Extra Large sizing nor women's garments cut to men's patterning are considered acceptable, since proper fit facilitates mobility and minimizes stress.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

11.0 SELF-BINDING

Liner and moisture barrier shall be stitched together and turned, then topstitched, to create a self binding edge. The extra bulk of separate binding material is specifically prohibited.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

12.0 THREAD

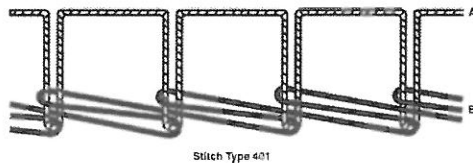
All thread used in structural seams shall be Nomex® of minimum Tex size T-70. Light colored garments and trim areas shall feature yellow thread. Black and dark garments shall feature black thread. Tan or bronze colored garments shall feature tan thread.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

13.0 STITCH METHODS

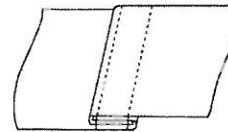
13.1 MAJOR A & B SEAMS

Except for the collar Major A seam, which is single-needle lock stitched three times, all Major A & B seams (as defined by NFPA 1971) shall be double stitched, double feld throughout all three layers (outer shell, moisture barrier and thermal liner), and shall be made with Nomex® thread, minimum Tex size T-90. Detailed stitch and seam type requirements are shown below.



Stitch Type 401

Stitch Type 401
Double lockstitch, as defined by
ASTM D 6193-97



Seam Type LSc-2 (Modified)

Modified Seam Type LSc-2
Double feld seam, modified only to ensure
that both stitch lines penetrate all layers of
cloth at joining, otherwise as defined by
ASTM D 6193-97

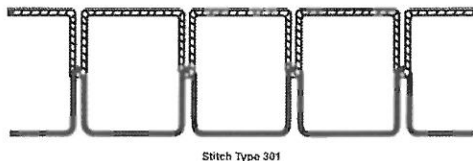
Also, all moisture barrier seams shall be tape-sealed to meet all requirements of the NFPA 1971 Liquid Penetration Resistance Test.

Does Your Bid Comply With All Aspects Of This Section?

For Outer Shell:	Yes _____	No _____
For Thermal Lining:	Yes _____	No _____
For Moisture Barrier:	Yes _____	No _____

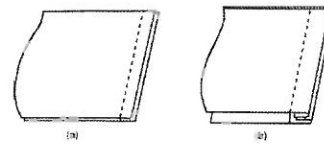
13.2 MINOR SEAMS

Most Minor seams, such as storm shields and mated hems, shall also be stitched with the specified Nomex thread. Detailed stitch and seam type requirements are shown below.



Stitch Type 301

Stitch Type 301
Lockstitch as defined by ASTM D 6193-97



Seam Type SSae-2

Seam Type SSae-2
As defined by ASTM D 6193-97, shown
(a) before and (b) after required turning

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

13.3 POCKETS

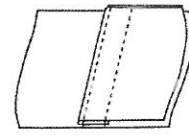
Flat garment pockets shall be stitched with the specified Nomex® thread. Detailed stitch and seam type requirements are shown below.



Stitch Type 301

Stitch Type 301

Lockstitch as defined by ASTM D 6193-97

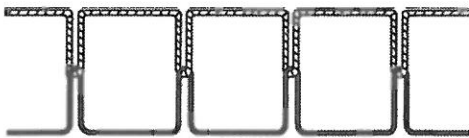


Seam Type LSd-2

Seam Type LSd-2

As defined by ASTM D 6193-97

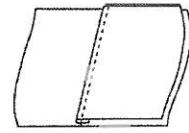
3-Dimensional pocketing shall feature these same construction details, but the reinforced single stitch Seam Type LSd-1 may be substituted for LSd-2. Detailed seam type requirements are shown below.



Stitch Type 301

Stitch Type 301

Lockstitch as defined by ASTM D 6193-97



Seam Type LSd-1

Seam Type LSd-1

As defined by ASTM D 6193-97

Does Your Bid Comply With All Aspects Of This Section? Yes No

13.4 TRIM AND DANGER LABELS

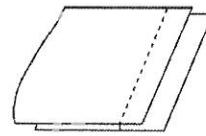
Trim and DANGER labels shall be stitched with the specified Nomex® thread. Detailed stitch and seam type requirements are shown below.



Stitch Type 301

Stitch Type 301

Lockstitch as defined by ASTM D 6193-97



Seam Type SSbd-1

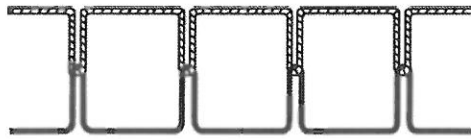
Seam Type SSbd-1

As defined by ASTM D 6193-97

Does Your Bid Comply With All Aspects Of This Section? Yes No

13.5 SINGLE LAYER HEMMING AND FINISHING

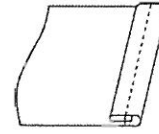
Single layer hemming and finishing shall be stitched with the specified Nomex® thread. Detailed stitch and seam type requirements are shown below.



Stitch Type 301

Stitch Type 301

Lockstitch as defined by ASTM D 6193-97



Stitch Type Efb-1

Seam Type Efb-1

As defined by ASTM D 6193-97

Does Your Bid Comply With All Aspects Of This Section? Yes No

14.0 POCKETS

When exterior pockets are specified, the following requirements shall apply to all such custom option specified exterior pockets:

All pockets and flaps shall be reinforced at the top corners with bar tack stitching.

All pockets shall be reinforced with an extra layer of NFPA-certified outer shell, moisture barrier, or other NFPA-certified reinforcement material for extra durability. The exact location of the reinforcements shall be identified in the custom options section(s).

All pockets shall have a means to drain water and shall have a means of closure.

All pocket closures shall be made either with hook and loop fastener tape a minimum of 1.5 inches (3.8 cm) wide, with a flap, or with snaps. The specific placement of the closure system shall be outlined in the custom options sections.

Does Your Bid Comply With All Aspects Of This Section? Yes No

15.0 TAILORED GRADING OF GARMENT LININGS

All garment layers and Cold Weather Accessory Linings shall be graduated in size to fit within in each other in the overall composite without causing bunching or binding when the garment is worn.

Does Your Bid Comply With All Aspects Of This Section? Yes No

16.0 POINTS OF STRESS

All points of stress shall be reinforced with sturdy bartacks. Rivets are not acceptable because of their potential for rust and electrical or heat conduction.

Does Your Bid Comply With All Aspects Of This Section? Yes No

17.0 ASSET TRACKING SERVICES

Upon request, the manufacturer shall be capable of providing a Windows-compatible software program for the tracking of care, cleaning and maintenance of the department's PPE.

This tracking program shall meet or exceed all record-keeping requirements of standard NFPA 1851, *Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles*, Latest Edition

Labels on each separable part of the garment shall include a standard style interleaved 2 of 5 barcode containing (at a minimum) an individualized serial number for asset tracking purposes.

The manufacturer must be capable of providing onsite or internet training to department personnel who are involved with the daily use of this tracking program, and if there is an additional cost involved for this service, the Bidder must disclose those costs at the time of bid.

Does Your Bid Comply With All Aspects Of This Section? Yes No

18.0 REPAIRS AND ALTERATION SUPPORT

The manufacturer shall furnish, free of charge, reasonable quantities of NFPA 1971-certified thread, materials and other supplies to allow the department to manage its own ongoing internal maintenance efforts. Also, the manufacturer shall provide on call at no charge, during normal business hours, a liaison for the repair department to assist the Fire Department on a telephone consultation basis, on all maintenance or repair questions that might arise. Additionally, the manufacturer shall agree to expedite, on its own cost-only basis, all repairs that must be performed at the manufacturer's plant, rather than in department, over the life of the contract.

Does Your Bid Comply With All Aspects Of This Section? Yes No

19.0 HIGH TEMPERATURES THERMAL INSULATING MATERIALS REQUIREMENT

Because thermally stable materials are essential to maximizing protective performance in firefighters' PPE, and because NFPA only states "minimum" performance requirements, all thermal liner or thermal enhancing materials used in the garments shall also meet the following criteria after the 500 degree F oven test:

- 1) Material shall remain intact and flexible
- 2) No portion of the material shall crack, crumble or flake

Does Your Bid Comply With All Aspects Of This Section? Yes No

20.0 BREATHABILITY REQUIREMENT

Excluding where required by NFPA standard, necessary for functionality, or specifically called out in the custom option sections, all materials fabrics and reinforcements used in the construction of the garments shall be breathable and all moisture barrier material must be as specified in the Materials Section.

The breathability requirement includes but is not limited to: collar, chinstrap, storm shield, fly, water wells, front coat facings, and reinforcement cushioning where applicable.

Areas where non-breathability is allowed (absent Custom Option specifications): trim or other items placed externally on the arms that might need extra material to pass NFPA required Stored Energy Testing, hook and loop fastening, hardware or hardware backing, and pocket linings where used exterior to the outer shell.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

21.0 CONDUCTIVE AND COMPRESSIVE HEAT RESISTANCE (CCHR)

Using breathable materials as outlined in the section titled Breathable Materials, there shall be: A minimum area of 4" x 4" (10.2 cm x 10.2 cm) at the shoulders and elbows that provide a minimum of 25 CCHR at 2 psi. with a minimum 6" x 6" (15.2 cm x 15.2 cm) area at the knees that provide 25 CCHR at 8 psi.

In all three of these compression areas at least a portion of the protective area shall be made from high temperature fiber based materials sewn to the thermal liner on the inside of the liner toward the moisture barrier.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

22.0 SEAM PROTECTION AT CUFFS

At the coat and pant cuff Major A seams, the reflective trim shall stop just before the folding of the full field seam and for additional abrasion protection be covered by a sewn on strip of polymer coated Kevlar material laid on top of the Major A seam and covering each end of the trim.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

23.0 APPLICABLE DOCUMENTS

The following standards in their active versions on the date of invitation for bid shall form a part of this specification to the extent specified herein.

<u>STANDARD</u>	<u>TITLE</u>
ASTM D 6193-97	Standard Practice for Stitches and Seams
NFPA 1500, Latest Edition	Standard on Fire Department Occupational Safety and Health Program
NFPA 1851, Latest Edition	Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles
NFPA 1971, Latest Edition	Standard on Protective Ensemble for Structural Fire Fighting

Does Your Bid Comply With All Aspects Of This Section? Yes No

COAT

To avoid liability and interface problems, coats and pants shall be procured from the same manufacturer.

24.0 DESIGN CONCEPT (STYLING)

The standard coat design shall be 6-inches (15.2 cm) longer at the rear hem than at the front hem and provide continuous and unbroken moisture barrier and thermal liner protection from the collar seam to the hem at the bottom of the coat tail. Each coat length shall be determined by each individual's torso length to provide the coat-to-pant interface as defined by NFPA 1500. Coat design must interface properly with standard waist high bunker pants. To facilitate various body types the front to rear length differential shall be made available in 3-inch (7.5cm), 4-inch (10.0cm), 5-inch (12.5cm and 6-inch (15.0cm) "Tail Drops".

Does Your Bid Comply With All Aspects Of This Section? Yes No

25.0 PATTERNING CONCEPT

Garments shall feature a tailored three-piece body (with one-piece back) and one-piece, set-in sleeve construction throughout the outer shell, moisture barrier and thermal liner layers. One-piece garment body (either all layers or some layers) will not be considered acceptable since they cannot be tailored to hard-to-fit personnel. Similarly, garments with seams in mid-back are not considered acceptable because of backbone irritation that can occur with SCBA use. To facilitate individual tailoring needs, the major A & B seams joining the one-piece back to the right and the left front body panels (outer shell and all interior layers) shall be located at the most lateral position when the coat is laid flat for inspection.

Does Your Bid Comply With All Aspects Of This Section? Yes No

26.0 PATTERNING REQUIREMENTS

To assure maximum freedom of movement and reduce kinetic resistance with minimum garment weight and bulk, coat patterning shall include the following features:

- Degree of slope on shoulders shall be no more than 20%.
- Hydraulic Butterfly sleeve patterning having built-in underarm bellow with 85-degree Lift Up Release Action shall be provided to minimize coat hem rise.
- Sleeve attachment shall minimize shoulder lift and allow a full 360 degrees freedom of movement.
- Coat hem rise with overhead reach of both arms not to exceed 4-inch (10.2-cm) maximal extension on properly fitted garments.
- Shell-and-liner retraction at the cuff shall not exceed 1 inch (2.5 cm) when both arms are raised overhead. This helps eliminate wrist exposure.
- 10-inch (25.4-cm) chest over-sizing shall be provided.
- Coat sweep measurements must be consistent with the chest over-size at the hem.
- Reach when measured from cuff to cuff, with coat lying flat, and standard length sleeves extended to each side, shall be provided as detailed below.
- An alteration point at the hem that during manufacture allows the sweep dimension to be adjustable in two-inch (5.0cm) increments

<u>Chest Size</u>	<u>Standard Reach</u>
40 in (101.6 cm)	66 in (167.6 cm)
42 in (106.7 cm)	67 in (170.2 cm)
44 in (111.8 cm)	68 in (172.7 cm)
46 in (116.8 cm)	68 in (172.7 cm)

Does Your Bid Comply With All Aspects Of This Section? Yes No

27.0 DRAG RESCUE DEVICE (DRD)

Manufacturer shall supply an NFPA required and certified Drag Rescue Device with each coat. Each strap will be properly labeled with the chest size(s) the Rescue Strap is designed to fit.

Rescue Strap shall be designed in a fashion that it functionally provides a dynamic and articulated action and to eliminate excess strapping material hanging down the back when installed between the garment's liner and outer shell.

The device shall be constructed using two components: a 1.75" (4.45 cm) Kevlar webbing grab handle; and a free-floating loop of Kevlar rope to go around each of the wearer's arms/shoulder.

The grab loop shall extend upward and pass through a tunnel of outer shell and pass out through a reinforced slot in the coat outer shell just below the center rear of the collar seam. The protruding grab loop shall then fold back down and be stored by hook and loop fastener.

The end of the garb loop shall be covered with an outer shell flap sewn below the held in place with hook & loop fastener to reduce the chances of snagging the grab loop by accident.

The Grab Handle shall be constructed of soft and pliable Kevlar webbing meeting the following specifications:

Description 100% Kevlar Double Plain Weave
Width 1.75" (4.45 dm)
Thickness 0.064" ± 0.010" (.163 cm ± .0254 cm)
Tensile 5,000 lb minimum (22.24 kN)

To facilitate comfort and safety the free-floating loop shall be constructed of soft and pliable Kevlar rope meeting the following specifications:

Description 100% Kevlar Tubular Plain Weave - Natural
Width .038" (.097 cm)
Thickness 0.144" ± 0.005" (.366 cm ± .013 cm)
Tensile 3500 lb minimum (15.57 kN)

Rescue Strap shall be sewn with Kevlar thread

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

28.0 LINER ATTACHMENT

The completed liner-moisture barrier assembly shall attach by means of four (4) evenly spaced glove snaps to each outer shell front facing to reduce weight, bulk and stiffness. To provide continuous moisture and pathogen protection at the front, the liner shall be positioned so it is sandwiched between the coat front facing and a breathable pathogen shield. The use of zippers or hook and loop fasteners in this area is not allowed due to their added weight, bulk and stiffness.

Liner sleeves shall be attached at the cuff by means of snaps on two (2) sets of Nomex tabbing per liner cuff. The male and female snap parts shall both be located on Nomex tabbing that is sewn to the liner at the cuff. A separate piece of Nomex tabbing shall be sewn to the shell cuff and fashioned as a loop without any snap hardware.

To provide continuous moisture protection and pathogen protection at the neck, the liner shall be positioned so that it is sandwiched between an outer-facing pathogen shield and an inside facing of the specified outer shell material.

Attachment at the neck shall be by means of four (4) glove straps that penetrate only the layer of the attachment strip facing towards the liner, so that metal contact at a wearer's neckline is completely eliminated.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

29.0 COAT CERTIFICATION LABEL ON LINER

The coat certification label on the liner shall be affixed to the inside right body panel of the liner in a fashion to provide an inside liner pocket.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

30.0 COAT CERTIFICATION LABEL ON SHELL

The coat label on the shell shall be affixed in a conspicuous location once the liner is removed.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

31.0 COLLAR

The collar shall be of layered construction, consisting of a layer of waterproof moisture barrier and a layer of NFPA 1971-certified insulating material, sandwiched between two (2) layers of specified outer shell material. NFPA compliant collars shall be at least 3 inches (7.6 cm) high while CGSB compliant collars shall be at least 4 inches (10.2 cm) high. The design shall incorporate in its patterning a natural contour that will allow proper fit and performance in the standing (upright) or stowed position.

There shall be no vertical or horizontal seams or stitching in the body of the collar. The left outside of the collar shall have a sewn piece of 2-inch x 2-inch (5.0-cm x 5.0-cm) hook fastener tape for chinstrap-to-collar closure. The fastener tape shall be located rear ward far enough to allow for the location of a forward mounted microphone tab if so desired. Each collar shall be graded to individual coat sizes.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

32.0 CHIN STRAP

The chinstrap shall be of layered construction identical to that of the collar configuration described in the previous paragraphs. Chinstrap shall be of a crescent shaped design with *minimum dimensions of:* 9 inches (22.5 cm) long across the top corners, 10.5 inches (26 cm) long across the bottom corners, and 3.5 inches (8.75 cm) in vertical height, measured at the center. The leading underside edge of the chinstrap shall have a 4.0-inch-wide (3.8 cm-wide) horizontal strip of loop fastener tape to ensure an adequately adjustable closure and to ensure passage of the Whole Garment Liquid Penetration Test.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

33.0 HANG-UP LOOP

An 80-pound (36.3 kg) tear strength hang-up loop shall be provided at the interior collar seam. The loop shall be constructed of triple layers of the specified outer shell material, lockstitched to the coat. Webbing is not acceptable.

Does Your Bid Comply With All Aspects Of This Section? Yes No

34.0 SLEEVES

To prevent stove-piping the sleeves shall be individually graded by coat size and sleeve length. For maximum freedom, the sleeve design shall feature extra full cut one-piece set-in sleeves with built-in bellows. To reduce the chances of possible top seam failure in that high thermal exposure area, the sleeve Major seams shall follow the underside of the arm and shall not cross over the outside of the elbow joint. Sleeve seam and sleeve attachment to coat body in all layers shall be 100% double feld and double stitched for maximum.

Does Your Bid Comply With All Aspects Of This Section? Yes No

35.0 INNER WRISTLET & WATERWELL

Every coat shall feature a minimum 4.5-inch (11.4-cm) long, double-layer knit inner wristlets protected by a flame-resistant and moisture-resistant inner waterwell. The inner wristlet shall be sewn to the thermal liner sleeve end (not to the outer shell). The specified moisture barrier shall form an inner waterwell with an elastic gather sewn to the moisture barrier sleeve end.

Does Your Bid Comply With All Aspects Of This Section? Yes No

36.0 EXTERNAL WRISTLET

Every coat shall feature a 2.5-inch (6.4 cm) long knit outer wristlet, which shall be mounted to the end of each outer shell sleeve to prevent liquid and debris movement up the sleeve between the outer shell and the moisture barrier/ thermal liner assembly.

Does Your Bid Comply With All Aspects Of This Section? Yes No

37.0 FRONT CLOSURE PROTECTIVE OVERLAP

Two-inch-wide (5.1 cm-wide) panels of breathable moisture/ pathogen barrier and specified thermal liner materials shall be provided at coat front closure facings to preclude any type of break in the protective envelope. The entire circumference of a closed coat shall consist of specified shell, moisture barrier and thermal liner materials.

An additional layer of breathable moisture/ pathogen barrier material shall be sewn between the 2-inch-wide (5.1 cm-wide) panels and outer shell coat body for the entire length of coat front in a fashion to prevent liquid entry during the NFPA 1971 Whole Garment Liquid Penetration Test.

Does Your Bid Comply With All Aspects Of This Section? Yes No

38.0 COMPOSITE MATERIALS

The specifier has determined the ONLY acceptable combination of materials. Any substitution of materials shall be grounds for immediate disqualification of bid without further consideration.

38.1 OUTER SHELL

7.0 oz.; Kevlar/Nomex ripstop weave; 40% Nomex/60% Kevlar; EWR - Khaki

38.2 THERMAL LINING

7.2 oz.; 100% spun 3.4 oz. Nomex facecloth; light 3.8 oz. Kevlar batt

38.3 MOISTURE BARRIER

Crosstech Type 2F

Does Your Bid Comply With All Aspects Of This Section?

For Outer Shell:	Yes	_____	No	_____
For Thermal Lining:	Yes	_____	No	_____
For Moisture Barrier:	Yes	_____	No	_____

39.0 COAT CUSTOM OPTIONS TO BE PROVIDED

Instructions in this custom options section that contradict earlier specifications or statements supersede those earlier specifications or statements as long as the required certifications are not compromised.

San Antonio Label with Fire Fighter Name

Property of San Antonio FD

Name

- placed on fly liner & thermal next to liner port Wildland Design & Labeling

Wildland Design with Positive Closure DRD

Positive Closure Articulating Rapid Rescue Strap in new coat

Trim -(1) NFPA -3" Lime 2-Tone Reflexite Brilliance

Trim- Split cuff bands w/ SET -Lime 2-Tone Reflexite Brilliance

Hem Patch -Kevlar/Nomex EWR Khaki

FF LAST NAME or 1st INITIAL + LAST NAME - delete 1st initial ONLY if necessary - avg 8 letters - Ok to use 2" letters to fit

8 -3" sewn letter -lime Reflexite Brilliance

Embroidered Texas Flag - right sleeve

Embroidered American Flag - left sleeve

BPR -Foldover Comfort Chinstrap -34K

Shield 7" Wide

1.5" Velcro/Zipper Coat Closure -Kevlar/Nomex EWR Khaki

Split Velcro On Closure for Positive Closure RRS

Collar & Chinstrap lined w/Aralite + Crosstech/PJ

Dead Air Panels Extended - Coat

Half Hi Bellows Pockets -Kevlar/Nomex EWR Khaki - 6" x 9" x 1.5"

Mic Tab -Kevlar/Nomex EWR Khaki - on shield (stormflap) - 1.5" x 3"

Place 4" below top of shield Mic Tab -Kevlar/Nomex EWR Khaki - left chest - 0.5" x 2.5"

Aligned with Mic Tab on shield - Or as close to this position as possible - Place Mic Tab 1/2" over from shield

Mic Tab

-Kevlar/Nomex EWR Khaki - right chest - 0.5" x 2.5"

Aligned with Mic Tab on Shield -placed 1/2" over from shield
Large Hook on Patch - Kevlar/Nomex EWR Khaki - right chest
As Close To Shield As Possible - Place directly above trim
Radio Pocket -Kevlar/Nomex EWR Khaki - left chest - 7 x 3.5 x 2
Top of Pocket Not Flap to be 9.5" below shoulder seam or as close to this position as possible - Flap to be 2"W x 5.5"L - Align right edge of flap with right edge of pocket

Hinged Pocket Design -Kevlar/Nomex EWR Khaki - left chest
Sub Wristlets- Long with tabs -Nomex

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

PANTS

To avoid liability and interface problems, coats and pants shall be procured from the same manufacturer.

40.0 DESIGN CONCEPT (STYLING)

The pant shall be of a traditional waist-high-only design to facilitate full torso ventilation of front, rear and sides of trunk for maximum body cooling effect to help minimize firefighter heat stress. For this reason, other than waist-high pants shall not be considered acceptable or "equal," since additional trunk wrapping traps heat and moisture, increasing heat stress buildup while also creating mechanical resistance when covering the natural torso flexion point of the waist.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

41.0 PATTERNING CONCEPT

Garments shall feature a tailored four-piece body plus a one-piece, over-sized crotch diamond pattern in the outer shell, moisture barrier and thermal liner.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

42.0 PATTERNING REQUIREMENTS

To assure maximum freedom of movement and reduced kinetic resistance with minimum garment weight and bulk, the pants patterning shall:

- Incorporate hydraulic, swivel action leg-to-torso interfaces.
- Incorporate an oversized diamond-shaped crotch insert, graded according to size, for maximum action stride, optimum stepping reach and no "in-crotch" seaming.
- In the outer seam hip area, in all three layers shall, incorporate convex seam technology to provide for generous seat expansion when squatting and crawling without creating unsightly bagginess.
- That the diamond extend from just above the left knee to just above the right knee, and be centered equally from front to rear. Width of diamond at top of crotch shall be approximately proportionally graded to waist size and inseam length.
- Ensure that pants rest in normal body line balance of 22 inches (55.9 cm) center distance at the cuff for 42 waist, 30 inseam pants.
- Provide for an alteration point at the hips so that during manufacture the hip dimension can be adjustable in two-inch (5.0cm) increments

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

43.0 SUSPENDER BUTTONS

Eight (8) heavy duty, rust-resistant suspender buttons shall be positioned around the waist. Suspender buttons shall be mounted through waistband of triple layer outer shell material that is internally reinforced with an additional band of coated needlepunch aramid.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

44.0 LINER ATTACHMENT

The moisture barrier and thermal liner assembly shall be attached to the outer shell at the waistband with seven (7) evenly-spaced glove snaps. Liners shall be attached at the cuff by means of snaps on two (2) sets of Nomex tabbing per liner cuff. The male and female snap parts shall both be located on Nomex tabbing that is sewn to the liner at the cuff. A separate piece of Nomex tabbing shall be sewn to the shell cuff and fashioned as a loop without any snap hardware.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

45.0 PANT CERTIFICATION LABEL ON LINER

The pant certification label on the liner shall be affixed to the inner left hip area of the liner.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

46.0 PANT CERTIFICATION LABEL ON SHELL

The pant label on the shell shall be affixed to the facing at the fly..

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

47.0 FLY FRONT

The outer shell fly shall be lockstitched to the left side of the front opening and shall be in proportion to waist size and crotch rise in both length and width. Fly inner lining shall extend at least 2 inches (5.1 cm) to the left of the outer shell fly attachment seam and shall be constructed of certified breathable moisture barrier and thermal liner. The right front pant opening shall have an internal facing extending at least 2 inches (5.1 cm) to the right and constructed of specified fabric. In combination with the liner, the system shall offer 360-degree protection without gaps during movement of the outer shell moisture barrier and thermal liner. Closure shall be by means of a minimum 1.5-inch-wide (3.8-cm-wide) hook and loop fastener, and all construction techniques used shall provide liquid penetration protection under the NFPA 1971 Whole Garment Liquid Penetration Test. The fly shall be graded to the waist size of garments and crotch rise.

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

48.0 COMPOSITE MATERIALS

The specifier has determined the ONLY acceptable combination of materials. Any substitution of materials shall be grounds for immediate disqualification of bid without further consideration.

48.1 OUTER SHELL

7.0 oz.; Kevlar/Nomex ripstop weave; 40% Nomex/60% Kevlar; EWR - Khaki

48.2 THERMAL LINING

7.2 oz.; 100% spun 3.4 oz. Nomex facecloth; light 3.8 oz. Kevlar batt

48.3 MOISTURE BARRIER

CROSSTECH TYPE 2F

Does Your Bid Comply With All Aspects Of This Section?

For Outer Shell:	Yes _____	No _____
For Thermal Lining:	Yes _____	No _____
For Moisture Barrier:	Yes _____	No _____

49.0 PANT CUSTOM OPTIONS TO BE PROVIDED

Instructions in this custom options section that contradict earlier specifications or statements supersede those earlier specifications or statements as long as the required certifications are not compromised.

San Antonio Label with Fire Fighter Name
Property of San Antonio FD
Name

- placed on fly liner & thermal next to liner portWildland Design & Labeling
Trim- 3" Cuff -Lime 2-Tone Reflexite Brilliance
Thermal Knees - 3 layers Nomex Batt
Angled Cuffs -Pants -Kevlar/Nomex EWR Khaki
Pants Cuffs -Kevlar/Nomex EWR Khaki
BiFlex Heat Channel Knees Replaceable - Kevlar/Nomex EWR Black
Horizontal Strips in BiFlex knee to be Arashield Black
Knees -Stitched Twice
Take Up Straps 2 Postman -Kevlar/Nomex EWR Khaki
X-Large Bellows Pockets -Pants -Kevlar/Nomex EWR Khaki - 10" x 10" x 2"
Tool Divider - Kevlar
Place in left bellows pocket - 2 equal compartments - tool divider to be 6" high - on pant
portionFull Kevlar Lined
3 Vertical Strips Velcro on Flap/Full on Pocket
Snap Style Suspender Attachment
Dyna-Fit Suspenders w/Snap Attachment Installed
w/Barcoded Label

Does Your Bid Comply With All Aspects Of This Section? Yes _____ No _____

Specifications for Structural
Firefighting Footwear
Honeywell PRO Series 4132

Protective Footwear for Firefighters Honeywell PRO Series 4132

LEGAL RIGHT TO SPECIFY

The Fire Department (for the remainder of this section referred to as the “specifier”) chooses to exercise its Legal Right to Specify as determined by the U.S. Supreme Court’s affirmation of the decision handed down in the case of Whitten Corp. vs. Paddock, by the U.S. District Court of Massachusetts, the First Federal District Court, which in effect states:

- 1) That as trained professionals, specifiers make informed judgments on products that they feel best serve their needs. Also, that proprietary specifications (if chosen) DO NOT violate any antitrust laws. Technically, very few brands of material or equipment are exactly alike, and if the specifier wants to limit the specification to one source, he has the right to do so and enforce it.
- 2) Only the specifier has the responsibility and judgment for determining whether a proposed substitution is an “or equal”.
- 3) That from start to finish in the purchasing process, only the specifier can ultimately decide if another desirable product is available in lieu of the specification.
- 4) Finally, that the courts concluded “the burden is on the supplier or manufacturer, who has NOT been specified, to convince the specifier that their product is equal for the purpose of a particular project”.

The specifier has determined that this product specification shall represent the product to which all offerings shall be compared. Due to the fact that firefighting is an ULTRAHAZARDOUS, UNAVOIDABLY DANGEROUS activity, only trained Fire Department personnel with specific knowledge in the area of Personal Protective Equipment shall be allowed to make the final determining decision on the selection of the appropriate product to serve the Fire Department’s needs.

1.0 PURPOSE AND SCOPE

This specification defines the minimum requirements for a firefighter's structural footwear . The purpose of the footwear is to afford limited protection to the firefighter against adverse environmental effects during fire ground operations, as defined by the National Fire Protection Association's standard NFPA 1971, Protective Ensemble for Structural Fire Fighting, 2013 Edition (hereinafter referred to as NFPA 1971, except in the Applicable Documents section). In the absence of comment on a particular point, industry standard practice shall be presumed to prevail. Workmanship and material shall be first quality throughout. All exceptions to specifications must be clearly spelled out at the time of bid. In the absence of comment to a specific point, the bidder is required to furnish a wholly compliant element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

3.0 CERTIFICATION

The manufacturer must certify that the elements proposed in its bid meet or exceed all requirements of NFPA 1971. The manufacturer must also list and label this product with Underwriters Laboratories Inc. (UL) and/or Safety Equipment Institute (SEI) as the third party

certification organization prescribed in NFPA 1971. All certification testing and test preconditioning must have been performed by an ISO 17025-certified laboratory. UL or a UL Authorized Client Test Data Program laboratory will fulfill this requirement.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

The manufacturer shall be registered to ISO 9001, Quality Management Systems - Requirements, 2008.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

4.0 WARRANTY

The manufacturer must provide a one year product warranty against defects in materials and workmanship with the bid package.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

5.0 PRODUCT COUNTRY OF ORIGIN

For liability reasons, the footwear must be manufactured in the United States of America or Canada by companies with their assets and incorporation within the United States of America or Canada.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

6.0 LABELING REQUIREMENTS

Labels shall be permanently and integrally printed on materials that meet all the requirements for labels of NFPA 1971. The footwear shall be clearly labeled to fully identify the major material content and shall be labeled with the FEMSA-style DANGER label.

The labeling shall contain manufacturing information, which shall include, at a minimum, a lot number and manufacturing date.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

7.0 CARE INSTRUCTIONS

The manufacturer shall provide a user information guide which complies with user information requirements of NFPA 1971, and shall reference that standard. Topics shall include, but not necessarily be limited to: pre-use information, preparation for use, inspection frequency and details, don/doff, use consistent with NFPA 1500, maintenance and cleaning, and retirement and disposal criteria and considerations. This document shall be packaged with each element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

8.0 TRACEABILITY PROGRAM

The manufacturer shall have in place a computer maintained traceability program which allows for the assignment of a production lot number to each element. A label is attached to the element which contains an individualized serial number.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

9.0 ASSET TRACKING SERVICES

When specified in the Section CUSTOM OPTIONS, the manufacturer shall provide a Windows-compatible software program for the tracking of care, cleaning and maintenance of the department's PPE. This tracking program shall meet or exceed all record-keeping requirements of NFPA 1851, Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, 2008 Edition.

The manufacturer shall be capable of providing onsite or internet training to department personnel who are involved with the daily use of this tracking program, and if there is an additional cost involved for this service, the Bidder must disclose those costs at the time of bid.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

10.0 REPAIRS

The manufacturer shall describe its service facilities and equipment to make necessary repairs to the boots, for cases in which repair of a damaged boot is deemed preferable to replacement.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

11.0 APPLICABLE DOCUMENTS

The following standards in their active versions on the date of invitation for bid shall form a part of this specification to the extent specified herein.

STANDARD TITLE

NFPA 1500, 2007 Edition Standard on Fire Department Occupational Safety and Health Program

NFPA 1851, 2008 Edition Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles

NFPA 1971, 2013 Edition Standard on Protective Ensemble for Structural Fire Fighting and Class 75 impact resistance/compression resistance requirements of ASTM F2413-05.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

12.0 DESIGN CONCEPT (STYLING), MATERIALS AND CONSTRUCTION

DESIGN

Shall be a 14" high, black, reinforced toe, pull-on bunker style with side and back stays, water-repellent, polishable leather/fire resistant fabric safety boots having a safety toe, electrical hazard rated soles, bottom penetration resistance barrier, steel shank, shin guard and quick donning and doffing features for fire suppression personnel.

UPPER

MIL AB 5½ oz. per square foot silicone impregnated cowhide leather and 7 oz. Advance Rip Stop fabric.

PULL-ON LOOPS

Four (4) one piece, ¾" wide, fully reinforced, pull on leather straps fastened approximately 1" below top line to exterior boot shaft utilizing 2" x 1 ½" shield-shaped anchor. Stitching does not penetrate Crosstech® bootie package. Straps are replaceable by construction.

SAFETY TOE

.062" (+.005"/-.0025") austempered oblique shaped steel toe treated with zinc phosphate rust preventative. Hardness of steel toe is 42-54rc (Rockwell Hardness).

SHANK

19 gauge, austempered steel with triple linear ridges treated with zinc phosphate rust preventative.

PUNCTURE RESISTANT BOTTOM PLATE

Stainless flex steel bottom plate with full hard temper, tensile 180,000 psi minimum and .017" - .02" thickness sized to allow maximum bottom puncture resistance protection.

INSOLE

4 iron Texon designed for welt construction shoes. Protex treated for resistance to fungal growth. Wicks perspiration away from the foot and dries quickly. Lightweight with excellent flex endurance.

INSOLE CAVITY FILLER

Ground cork compound.

MIDSOLE

Full length 4 iron black neoprene material.

SOLE AND HEEL BLOCKER

Stitched-down Vibram® sole designed with lugs angled to provide substantial edging capabilities on both ascents and descents. Center medallion of stars surrounded by lug pattern provides maximum wear and traction. Larger lugs are close together for excellent durability yet separate for enhanced grip. Smaller lugs for more aggressive traction. Larger lugs on heel area to assure long lasting durability in this high-wear area. Lugs grouped for durability and grooved for traction. Sole is replaceable by construction.

WELT

Full wrap-around Goodyear neoprene storm welt.

BACKPART MOLDED HEEL COUNTER

Thermoplastic back part molded heel counter provides proper, stable shaping to the last ensuring superior comfort, fit, durability and extra support.

THERMAL BARRIER

Full height bootie of 7.5 oz. per square yard, 100% virgin Kevlar® felt provides thermal protection and cut/puncture protection. Thermal barrier located interior to the moisture barrier to prevent moisture wicking.

FULL HEIGHT CROSSTECH FOOTWEAR FABRIC BOOTIE SYSTEM

Laminate of Cambrelle®, 7.5 oz. virgin Kevlar® felt and CROSSTECH® Footwear Fabric. Four piece base bootie with two piece upper quarter pattern. All seams butt stitched and sealed with GORE-TEX® tape.

REINFORCEMENT

Reinforcement material by Texon protects the CROSSTECH® Fabric Moisture Barrier from incidental punctures while not obstructing its breathability. Made from a blend of thermoplastic film materials. Flexible and extremely resilient to wear and tear.

SHINGUARD

Texon 4 Iron 428, low weight, natural fiber for quick drying and high performance and protection. Shin guard dimensions are 1 11/16" x 6 7/16".

SHAFT TOP LINE

Finished with leather American top binding.

THREAD UPPERS

Nomex® 24/4 and 105 Kevlar®.

UPPER STITCHING

Single lock stitched a maximum of ten (10) stitches per inch.

UPPER STITCH CONFIGURATION

- Single needle lock stitch used on side binding and backstays.
- Double needle lock stitch used on vamp/foxing to shaft connection.
- Pull-on loops secured with single needle lock stitch.

THREAD-WELT TO MIDSOLE

#690 Bonded Nomex®.

SOLE AND HEEL BLOCKER ADHESION

Nail-less installation - high temperature adhesive used to affix blocker to neoprene midsole.

TOE COVER

Tapered urethane impregnated protective leather toe piece.

SIZES (Full and half sizes)

C – 5 to 13	D – 5 to 13, 14, 15
E – 5 to 13, 14, 15	EEE – 7 to 13, 14, 15, 16

Special make up sizes available in both genders

MARKINGS

Interior label containing all information as required by NFPA 1971 "Standard on Protective Ensemble for Structural Fire Fighting" 2013 edition.

BARCODING

Interleaved (Code 128) 2 of 5 symbology incorporating a unique serial number. Symbology information will also appear in written text in the English language. Bar-coding will appear in the right boot of each pair.

UNION MADE IN THE USA

13.0 CUSTOM OPTIONS

Requirements or instructions in this section which conflict with earlier sections shall supersede the earlier requirements or statements.

None

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

PERCENTAGE SPECIFICATION COMPLIANCE CALCULATIONS

Total Number "Yes/No" Questions _____

Total Number of Yes Answers _____

Total Number of No Answers _____

% Specification Compliance: $[\text{Total Yes Answers} / \text{Total \# of Questions}] \times 100 = \%$

Each "No" answer requires a full written explanation.

Each "Yes/No" question not checked where provided will be considered a "No" answer.

Protective Footwear for Firefighters Honeywell PRO Series 5006

LEGAL RIGHT TO SPECIFY

The Fire Department (for the remainder of this section referred to as the "specifier") chooses to exercise its Legal Right to Specify as determined by the U.S. Supreme Court's affirmation of the decision handed down in the case of Whitten Corp. vs. Paddock, by the U.S. District Court of Massachusetts, the First Federal District Court, which in effect states:

- 1) That as trained professionals, specifiers make informed judgments on products that they feel best serve their needs. Also, that proprietary specifications (if chosen) DO NOT violate any antitrust laws. Technically, very few brands of material or equipment are exactly alike, and if the specifier wants to limit the specification to one source, he has the right to do so and enforce it.
- 2) Only the specifier has the responsibility and judgment for determining whether a proposed substitution is an "or equal".
- 3) That from start to finish in the purchasing process, only the specifier can ultimately decide if another desirable product is available in lieu of the specification.
- 4) Finally, that the courts concluded "the burden is on the supplier or manufacturer, who has NOT been specified, to convince the specifier that their product is equal for the purpose of a particular project".

The specifier has determined that this product specification shall represent the product to which all offerings shall be compared. Due to the fact that firefighting is an ULTRAHAZARDOUS, UNAVOIDABLY DANGEROUS activity, only trained Fire Department personnel with specific knowledge in the area of Personal Protective Equipment shall be allowed to make the final determining decision on the selection of the appropriate product to serve the Fire Department's needs.

1.0 PURPOSE AND SCOPE

This specification defines the minimum requirements for a firefighter's structural footwear. The purpose of the footwear is to afford limited protection to the firefighter against adverse environmental effects during fireground operations, as defined by the National Fire Protection Association's standard NFPA 1971, Protective Ensemble for Structural Fire Fighting, 2013 Edition (hereinafter referred to as NFPA 1971, except in the Applicable Documents section). In the absence of comment on a particular point, industry standard practice shall be presumed to prevail. Workmanship and material shall be first quality throughout. All exceptions to specifications must be clearly spelled out at the time of bid. In the absence of comment to a specific point, the bidder is required to furnish a wholly compliant element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

3.0 CERTIFICATION

The manufacturer must certify that the elements proposed in its bid meet or exceed all requirements of NFPA 1971. The manufacturer must also list and label this product with Underwriters Laboratories Inc. (UL) and/or Safety Equipment Institute (SEI) as the third party

certification organization prescribed in NFPA 1971. All certification testing and test preconditioning must have been performed by an ISO 17025-certified laboratory. UL or a UL Authorized Client Test Data Program laboratory will fulfill this requirement.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

The manufacturer shall be registered to ISO 9001, Quality Management Systems - Requirements, 2008.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

4.0 WARRANTY

The manufacturer must provide a one year product warranty against defects in materials and workmanship with the bid package.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

5.0 PRODUCT COUNTRY OF ORIGIN

For liability reasons, the footwear must be manufactured in the United States of America or Canada by companies with their assets and incorporation within the United States of America or Canada.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

6.0 LABELING REQUIREMENTS

Labels shall be permanently and integrally printed on materials that meet all the requirements for labels of NFPA 1971. The footwear shall be clearly labeled to fully identify the major material content and shall be labeled with the FEMSA-style DANGER label.

The labeling shall contain manufacturing information, which shall include, at a minimum, a lot number and manufacturing date.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

7.0 CARE INSTRUCTIONS

The manufacturer shall provide a user information guide which complies with user information requirements of NFPA 1971, and shall reference that standard. Topics shall include, but not necessarily be limited to: pre-use information, preparation for use, inspection frequency and details, don/doff, use consistent with NFPA 1500, maintenance and cleaning, and retirement and disposal criteria and considerations. This document shall be packaged with each element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

8.0 TRACEABILITY PROGRAM

The manufacturer shall have in place a computer maintained traceability program which allows for the assignment of a production lot number to each element. A label is attached to the element which contains an individualized serial number.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

9.0 ASSET TRACKING SERVICES

When specified in the Section CUSTOM OPTIONS, the manufacturer shall provide a Windows-compatible software program for the tracking of care, cleaning and maintenance of the department's PPE. This tracking program shall meet or exceed all record-keeping requirements of NFPA 1851, Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, 2008 Edition.

The manufacturer shall be capable of providing onsite or internet training to department personnel who are involved with the daily use of this tracking program, and if there is an additional cost involved for this service, the Bidder must disclose those costs at the time of bid.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

10.0 REPAIRS

The manufacturer shall describe its service facilities and equipment to make necessary repairs to the boots, for cases in which repair of a damaged boot is deemed preferable to replacement.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

11.0 APPLICABLE DOCUMENTS

The following standards in their active versions on the date of invitation for bid shall form a part of this specification to the extent specified herein.

STANDARD TITLE

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NFPA 1851, 2008 Edition Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles

NFPA 1971, 2013 Edition Standard on Protective Ensemble for Structural Fire Fighting and Class 75 impact resistance/compression resistance requirements of ASTM F2413-05.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

12.0 DESIGN CONCEPT (STYLING), MATERIALS AND CONSTRUCTION

DESIGN

Shall be a 14" high pull-on, fabric/leather bunker style boot with patented 3" sloped PowerBack for less weight and added comfort in rear knee area. Side and back stays, fire resistant fabric, water-repellent leather, safety toes, electrical hazard rated soles, steel bottom penetration resistance barrier, steel shank, shinguard and quick donning and doffing features for fire suppression personnel.

UPPER

7½ oz. Nomex®/Kevlar® rip-stop fabric covers shaft of boot. MIL AB 5½ oz. per square foot silicone impregnated full grain cowhide leather covers shinguard, straps, and heel and vamp area.

PATENTED POWERTOES

Patented, fire resistant, abrasion resistant rubber covers entire frontal toe area and incorporates three horizontally extended durability bumper cleats to deter toe area abrasion and extend the life of the boot.

PATENTED POWERHEEL

Patented, fire resistant, abrasion resistant reflective rubber compound covers heel area with 3 horizontal cleats stitched and die cut through 5 ½ oz. silicone impregnated leather. Exposed cleats aid donning and doffing of footwear and extends and protects wear life of moisture barrier and heel counter.

PULL-ON LOOPS

Four (4) one piece, ¾" wide, fully reinforced, pull on leather straps fastened approximately 1" below top line to exterior boot shaft utilizing 2" x 1 ½" shield-shaped anchor. Stitching does not penetrate Crosstech® bootie package. Straps are replaceable by construction.

SAFETY TOE

.062" (+.005"/-.0025") austempered oblique shaped steel toe treated with zinc phosphate rust preventative. Hardness of steel toe is 42-54rc (Rockwell Hardness).

SHANK

19 gage, austempered steel with triple linear ridges treated with zinc phosphate rust preventative.

PUNCTURE RESISTANT BOTTOM PLATE

Stainless flex steel bottom plate with full hard temper, tensile 180,000 psi minimum and .017" - .02" thickness sized to allow maximum bottom puncture resistance protection.

INSOLE

7 iron Texon designed for welt construction boots. Protex treated for resistance to fungal growth. Wicks perspiration away from the foot and dries quickly. Low weight with excellent flex endurance

INSOLE CAVITY FILLER

Ground cork and binder compound.

REMOVABLE INSERT

Removable, orthopedically correct, PU insert with fabric liner. Upgrade available to patented DRYZ[®] insert comprised of polymer agents capable of absorbing 160 times its weight in moisture. Fabric liner controls bacteria and regulates temperature in foot area. By design inserts are both removable and replaceable.

MIDSOLE

Full length 4 iron black neoprene material.

SOLE AND HEEL BLOCKER

Fire resistant, stitched-down, Vibram[®] sole designed with lugs angled to provide substantial edging capabilities on both ascents and descents. Center medallion of stars surrounded by lug pattern provides maximum wear and traction. Larger lugs are close together for excellent durability yet separate for enhanced grip. Smaller lugs for more aggressive traction. Larger lugs on heel area to assure long lasting durability in this high-wear area. Lugs grouped for durability and grooved for traction. Sole is replaceable by construction.

SOLE COMPOUND

Fire/Ice compound has a minimum NBS abrasion of 120 and will withstand extreme heat. Provides superior traction on snow and ice as well as wet or dry surfaces.

WELT

Full wrap-around, reflective, Goodyear neoprene storm welt.

SHINGUARD

Texon 4 Iron 428, low weight, natural fiber for quick drying and high performance and protection. Shinguard dimensions are 1 11/16" x 6 7/16". External silicone impregnated MIL-AB leather cover measures 2 3/8" x 7 3/16".

BACKPART MOLDED HEEL COUNTER

Thermoplastic back part molded heel counter. Provides for proper shaping in heel area insuring superior comfort, fit and durability, and less stress in the lower back and pelvic area.

THERMAL/CUT RESISTANT BARRIER

Full height bootie of 7.5 oz. per square yard, 100% virgin Kevlar[®] felt.

FULL HEIGHT CROSSTECH FOOTWEAR FABRIC BOOTIE SYSTEM

Laminate of thermally bonded nonwoven fabric facecloth, 7.5 oz. 100% virgin Kevlar[®] felt and CROSSTECH[®] Footwear Fabric. Five piece base bootie with two piece upper quarter pattern. All seams butt stitched and sealed with Gore-Tex[®] tape. Kevlar[®] and facecloth fabric located interior to the Crosstech[®] moisture barrier to prevent moisture wicking.

SHAFT REINFORCEMENT

Blunt force puncture protection reinforcement material by Texon protects moisture barrier from incidental punctures while not obstructing breathability. Made from a blend of thermoplastic film materials. Flexible and extremely resilient to wear and tear.

SHAFT TOP LINE

Finished with leather American top binding.

THREAD UPPERS

Nomex[®] 24/4 and 105 Kevlar[®].

UPPER STITCHING

Single lock stitched a maximum of ten stitches per inch.

UPPER STITCH CONFIGURATION

- Single needle lock stitch used on side binding and backstays.
- Double needle lock stitch used on vamp/foxing to shaft connection.
- Pull-on loops secured with single needle lock stitch.

THREAD-WELT TO MIDSOLE

#690 Bonded Nomex®.

THREAD-INSEAMING

Nomex® 24/4 and 105 Kevlar®.

SOLE AND HEEL BLOCKER ADHESION

Nail-less installation - high temperature adhesive shall be used to affix blocker to neoprene midsole.

SIZES (Full and half sizes)

C – 6 to 12, 13, 14	D – 4 to 13, 14, 15
E – 4 to 13, 14, 15	EEE – 4 to 13, 14, 15, 16

Special make up sizes available.

MARKINGS

Interior label contains all information as required by NFPA 1971 "Standard on Protective Ensemble for Structural Fire Fighting" 2007 edition, Class 75 impact resistance/compression resistance requirements of ASTM F2413-05.

BAR-CODING

Code 128 symbology incorporating a unique serial number. Symbology information will also appear in written text in the English language. Bar-coding will appear in the right boot of each pair.

UNION MADE IN THE USA

13.0 CUSTOM OPTIONS

Requirements or instructions in this section which conflict with earlier sections shall supersede the earlier requirements or statements.

None

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

PERCENTAGE SPECIFICATION COMPLIANCE CALCULATIONS

Total Number "Yes/No" Questions _____

Total Number of Yes Answers _____

Total Number of No Answers _____

% Specification Compliance: $[\text{Total Yes Answers} / \text{Total \# of Questions}] \times 100 = \%$

Each "No" answer requires a full written explanation.

Each "Yes/No" question not checked where provided will be considered a "No" answer.

Specifications for Structural Firefighting Hood

MaskMate™ Style
HD-PLPL-SQ
Pbi®/Lenzing FR® Knit

Mask Mate Style Protective Hood for Firefighters Pbi®/Lenzing FR® Knit

LEGAL RIGHT TO SPECIFY

The Fire Department (for the remainder of this section referred to as the "specifier") chooses to exercise its Legal Right to Specify as determined by the U.S. Supreme Court's affirmation of the decision handed down in the case of Whitten Corp. vs. Paddock, by the U.S. District Court of Massachusetts, the First Federal District Court, which in effect states:

- 1) That as trained professionals, specifiers make informed judgments on products that they feel best serve their needs. Also, that proprietary specifications (if chosen) DO NOT violate any antitrust laws. Technically, very few brands of material or equipment are exactly alike, and if the specifier wants to limit the specification to one source, he has the right to do so and enforce it.
- 2) Only the specifier has the responsibility and judgment for determining whether a proposed substitution is an "or equal".
- 3) That from start to finish in the purchasing process, only the specifier can ultimately decide if another desirable product is available in lieu of the specification.
- 4) Finally, that the courts concluded "the burden is on the supplier or manufacturer, who has NOT been specified, to convince the specifier that their product is equal for the purpose of a particular project".

The specifier has determined that this product specification shall represent the product to which all offerings shall be compared. Due to the fact that firefighting is an ULTRAHAZARDOUS, UNAVOIDABLY DANGEROUS activity, only trained Fire Department personnel with specific knowledge in the area of Personal Protective Equipment shall be allowed to make the final determining decision on the selection of the appropriate product to serve the Fire Department's needs.

1.0 PURPOSE AND SCOPE

This specification defines the minimum requirements for a firefighter's structural Hood. The purpose of the hood is to afford limited protection to the head, neck and a portion of the shoulder area, of the firefighter against adverse environmental effects during fireground operations, as defined by the National Fire Protection Association's standard NFPA 1971, Protective Ensemble for Structural Fire Fighting, Latest Edition.

In the absence of comment on a particular point, industry standard practice shall prevail. Workmanship and material shall be first quality throughout. All exceptions to specifications must be clearly spelled out at the time of bid. In the absence of comment to a specific point, the bidder is required to furnish a wholly compliant element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

2.0 CERTIFICATION

The manufacturer must certify that the elements proposed in its bid meet or exceed all requirements of NFPA 1971. The manufacturer must also list and label this product with a third party certification organization as prescribed in NFPA 1971. All certification testing and test preconditioning must have been performed by the certification organization or an ISO 17025-certified, Authorized Client Test Data Program Laboratory of the third party certification organization.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

3.0 WARRANTY

The manufacturer must provide a product lifetime warranty against defects in materials and workmanship with the bid package.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

4.0 PRODUCT COUNTRY OF ORIGIN BERRY ACT COMPLIANCE

The element must be manufactured in the United States of America by companies with their assets and incorporation within the United States of America and be Berry Act Compliant with proper documentation furnished by manufacturer upon written request.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

5.0 LABELING REQUIREMENTS

Labels shall be permanently and integrally printed on materials that meet all the requirements for labels of NFPA 1971. The element shall be clearly labeled to fully identify the material content. The labeling on each element shall contain manufacturing information, which shall include, at a minimum, a lot number and manufacturing date.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

6.0 CARE INSTRUCTIONS

The manufacturer shall provide a user information guide which complies with user information requirements of NFPA 1971, and shall reference that standard. Topics shall include, but not necessarily be limited to: pre-use information, preparation for use, inspection frequency and details, don/doff, use consistent with NFPA 1500, maintenance and cleaning, and retirement and disposal criteria and considerations. This document shall be packaged with each element.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

7.0 TRACEABILITY PROGRAM

The manufacturer shall have in place a computer maintained traceability program which allows for the assignment of a production lot number to each element. The traceability program must be capable of tracing the element through assignment to the individual firefighter. When additional product traceability is requested in the Custom Options section, an additional label shall be attached to the element which contains an individualized serial number with corresponding standard industrial barcode.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

8.0 PATENT CONSIDERATIONS

Seller agrees to defend Buyer at Seller's own expense, in all suits, actions or proceedings in which Buyer is made a defendant for actual or alleged infringement of any United States of America or foreign letters of patent(s) resulting from Buyer's use of the goods purchased as a result of this Invitation to Bid. Seller further agrees to pay and discharge any and all judgments or decrees which may be rendered in any such suit, action or proceedings against Buyer.

Seller agrees to indemnify and hold harmless the Buyer from any and all licenses, royalty and proprietary fees or costs, including legal costs, which may arise out of Buyer's purchase and use of goods supplied by the seller. It is expressly agreed by Seller that these covenants are irrevocable and perpetual.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

9.0 ASSET TRACKING SERVICES

When specified by the department, the manufacturer shall provide a Windows-compatible software program for the tracking of care, cleaning and maintenance of the department's PPE. This tracking program shall meet or exceed all record-keeping requirements of NFPA 1851, Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles, Latest Edition.

The manufacturer shall be capable of providing onsite or internet training to department personnel who are involved with the daily use of this tracking program, and if there is an additional cost involved for this service, the Bidder must disclose those costs at the time of bid.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

10.0 REPAIRS

The manufacturer shall describe its service facilities and equipment to make necessary repairs to the element, for such cases in which repair is deemed preferable to replacement.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

11.0 APPLICABLE DOCUMENTS

The following standards in their active versions on the date of invitation for bid shall form a part of this specification to the extent specified herein:

NFPA 1500, Latest Edition Standard on Fire Department Occupational Safety and Health Program

NFPA 1851, Latest Edition Standard on Selection, Care, and Maintenance of Structural Fire Fighting Protective Ensembles

NFPA 1971, Latest Edition Standard on Protective Ensemble for Structural Fire Fighting

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

12.0 DESIGN CONCEPT (STYLING) AND CONSTRUCTION

The hood and materials shall meet or exceed both the design and performance requirements as outlined in NFPA 1971. The hood pattern shall consist of a circular crown piece, a head/neck piece and front/rear bibs/drapes.

The hood shall provide full head and neck coverage (excluding the face) and partial shoulder to shoulder coverage with chest and back drape of a "squared" hem design at least 14 inches (35 cm) wide and extend at least 6 inches (15.3 cm) below the neck seam at both the front and rear.

The crown piece seam shall be serged while the vertical seam down the back of the head, circumferential seam around the neck and seams atop the shoulders shall be flat-lock stitched. Hoods pieces shall be sewn with contrasting colored thread to assist in routine and advanced inspections of seam integrity.

Hemming shall be by double folding one inch (2.5 cm) of black knit fabric across the bottom of the hood to form a 0.5 inch (1.25 cm) finished hem that is double needle sewn with dark colored thread.

Hood shall feature an over-sized head section with a face opening to provide extra generous dimensions that easily stretch to a minimum of 18 inches (45 cm) to provide superior donning and fit characteristics for any size firefighter's head.

The face opening shall be of a "Mask Mate" style wherein it is patterned and cut so that it is adaptive to the widest portion of the firefighter's air mask to minimize obstruction of the firefighter's peripheral vision while maintaining an effect protective overlap with the edges of the air mask and air mask lens.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

13.0 MATERIALS

The hood body shall consist of a double layer of 7.0 ounce (+ or - 0.5 ounces) 20% Pbi / 80% Lenzing FR®, 1x1 Rib Knit. Third Party certification showing a minimum TPP of shall be furnished by manufacturer upon written request.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

14.0 PACKAGING

Each hood body shall be individually package in a clear poly-bag along with the all user information guides and information.

Does Your Bid Comply With All Aspects Of This Section? Yes ___ No ___

PERCENTAGE SPECIFICATION COMPLIANCE CALCULATIONS

Total Number of Yes Answers _____

Total Number of No Answers _____

% Specification Compliance: [# of Yes Answers / 14] x 100 = _____

Each "No" answer requires a full written explanation.
Each "Yes/No" question not checked where provided will be considered a "No" answer.