

OPTION 1

GENERAL SPECIFICATIONS PROTECTIVE JACKET AND PANTS FOR STRUCTURAL FIRE FIGHTING

Danville Fire Dept

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 and OSHA for structural fire fighters protective clothing.

_____ Comply _____ Exception

OUTER SHELL MATERIAL - JACKETS AND PANTS

The outer shell shall be constructed of TENCATE "AGILITY™" featuring ENFORCE™ Technology Kevlar®/PBO/ Nomex® blend material with an approximate weight of 6.6 oz. per square yard in a twill weave. The shell material must be treated with SST™ (SUPER SHELLTITE) which is a durable water-repellent finish that also enhances abrasion resistance. Color of the garments shall be dark gold. **Bids offering this shell material without the SST™ will not be considered.**

_____ Comply _____ Exception

THERMAL INSULATING LINER - JACKET AND PANTS

The thermal liner shall be constructed of 6.7 oz. per square yard TENCATE CALDURA® WITH NOMEX NANO ELITE; one layer of Nomex Nano and one layer of 2.3 oz. per square yard Nomex® E-89™ spunlaced Nomex®/Kevlar® aramid blend, quilt stitched to a FR Rayon Para-Aramid nylon Face Cloth. An approximate 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. This provides superior abrasion resistance to the less expensive, less durable "stitch and turn" method. Further mention of "Thermal Liner" in this specification shall refer to this section.

_____ Comply _____ Exception

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MOISTURE BARRIER - JACKETS AND PANTS

The moisture barrier material shall be W.L. GORE **CROSSTECH® Black moisture barrier** - Type 2F, which is comprised of a CROSSTECH® membrane laminated to a Nomex® IIIA woven pajama check substrate. The CROSSTECH® membrane is an enhanced bicomponent membrane 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. CROSSTECH® moisture barrier seams shall be sealed with GORE-SEAM® tape using a Series 6000 (or higher) GORE-SEAM™ sealing machine to afford comparable bacteriophage penetration resistance performance. 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 PANTS

The thermal liner and moisture barrier shall be completely removable from the jacket shell. Two strips of 5/8 inch wide FR 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 (see Collar section). The remainder of the thermal liner/moisture barrier shall be secured with snap fasteners appropriately spaced on each jacket facing and Are-Shield® snap fasteners at each shell sleeve end. There shall be one Ara-shield® snap tab in the liner in addition to snap fasteners to correspond with color coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

The thermal liner and moisture barrier shall be completely removable from the pant shell. Nine snap fasteners shall be spaced along the waistband to secure the thermal liner to the shell. The legs of the thermal liner/moisture barrier shall be secured to the shell by means of Ara-Shield® snap fasteners, 2 per leg. The Ara-shield® snap tabs shall be color coded to a corresponding color coded snap tab in the liner for ease of matching the liner system to the outer shell after inspection or cleaning is completed.

_____ 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

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STITCHING

The outer shell shall be assembled using stitch type #301, #401, #514 and #516. The thermal liners and moisture barriers shall be assembled using stitch type #301, #401, #504, #514, and #516. Major A outer shell structural seams, major B structural liner seams and shall have a minimum of 8 to 10 stitches per inch. All Major A seams shall be sewn with ball point needles only. All seams shall be continuously stitched only.

_____ Comply _____ Exception

JACKET CONSTRUCTION

BODY

The body of the shell and AXTION[®] liner system shall be constructed of three separate panels consisting of two front panels and one back panel. The body panels shall be shaped so as to provide a tailored fit thereby enhancing body movement and shall be joined together by double stitching with Nomex[®] thread. One-piece outer shells shall not be acceptable.

_____ 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)

32 inches in the front/36 inches long in the back.

35 inches in the front/39 inches long in the back.

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 (DRD) shall be installed in each jacket. The ends of a 1 inch wide strap, constructed of Kevlar[®], shall be sewn together to form a continuous loop. The strap shall be installed in the jacket between the liner system and outer shell such that when properly installed will loop around each arm. The strap will be accessed through a portal between the shoulders on the upper back where it is secured in place by an FR strap. The DRD shall be removable for laundering. The access port shall be covered by an outside flap of shell material, designed to fit between the shoulder straps of an SCBA. The flap will have a NFPA-compliant 3M Scotchlite[™] reflective logo patch sewn to the outside to clearly identify the feature as the DRD (Drag Rescue Device). The DRD shall not extend beyond the outside flap. This device provides a quickly deployed means of rescuing a downed firefighter. Flimsy, rope-style DRD straps will not be considered.

_____ Comply _____ Exception

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LINER ACCESS OPENING - JACKET

The liner system of the jacket shall incorporate an opening at the leading edges of the right front panel. This opening shall run a minimum of 11 inches 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

LOGOS

The garment brand shall be identified by means of FR Nomex thread embroidery on the top of the left collar denoting "GLOBE" as the manufacturer.

_____ Comply _____ Exception

RETROREFLECTIVE FLUORESCENT TRIM

The retroreflective fluorescent trim shall be lime/yellow 3M Scotchlite™ COMFORT Trim (Heat applied segmented L/Y borders with silver center).

Each jacket shall have an adequate amount of retroreflective fluorescent trim affixed to the outside of the outer shell to meet the requirements of NFPA #1971 and OSHA. The trim shall be in the following widths and shall be

NYC style; 3 inch wide stripes - 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, around each sleeve below the elbow, around each sleeve above the elbow.

_____ Comply _____ Exception

SEWN ON RETROREFLECTIVE LETTERING

Each jacket shall have

3" lime/yellow 3M Scotchlite™ lettering on Row A reading: DANVILLE

_____ Comply _____ Exception

LETTER PATCH

FR Hook and Loop Letter Patch

Lettering on Row G will be on a FR hook and loop letter patch. The patch shall be constructed of a double layer of outer shell material. The letter patch will attach to the back of the jacket with FR hook and loop fastener tape.

_____ Comply _____ Exception

OPTION 1

COLLAR & FREE HANGING THROAT TAB

The collar shall consist of a minimum four-layer construction and be of one-piece design. The outer layers shall consist of one layer of specified outer shell material on outside and a layer of PCA black Advance™ as standard on the inside and two layers of specified moisture barrier. The rear inside ply of aramid pajama check shall be sewn to the collar's back layer of outer shell at the edges only. The forward inside ply of moisture barrier shall be sewn to the inside of the collar at the edges only. The multi-layered configuration shall provide protection from water and other hazardous elements. The collar shall be a minimum of 3 inches high and graded to size. The leading edges of the collar shall extend up evenly from the leading edges of the jacket front body panels so that no gap occurs at the throat area. The collar's back layers of outer shell and moisture barrier shall be joined to the body panels with two rows of stitching. The collar's front layers of moisture barrier and outer shell shall have a strip of 5/8 inch wide FR hook fastener tape stitched to the inside lower edge and running the full length of the collar. The inside strip of 5/8 inch wide FR hook fastener tape sewn to the underside of the collar shall engage a corresponding piece of FR loop fastener tape on the neck extension of the liner system. A self material fabric hanger loop shall be sewn at the top of collar.

The throat tab shall consist of a minimum 4 layer construction and it shall be of be a scoop type design and constructed of two plies of outer shell material with two center plies of moisture barrier material. The throat tab shall measure not less than 3½ inches wide at the center tapering to approximately 2 inches at each end with a total length of approximately 9 inches. The throat tab will be attached to the right side of the collar by a 1 inch wide by 1½ inch long piece of Nomex® twill webbing. The throat tab shall be secured in the closed and stowed position with FR hook and loop fastener tape. The FR hook and loop fastener tape shall be oriented to prevent exposure to the environment when the throat tab is in the closed position. A 1½ inch by 3 inch piece of FR loop fastener tape shall be sewn horizontally to the each end of the throat tab and a 1 inch by 3 inch piece of FR hook fastener tape shall be sewn horizontally to the throat tab. A corresponding piece of FR hook fastener tape measuring 1 inch by 3 inches shall be sewn horizontally to the leading outside edge of the collar on the left side, for attachment and adjustment when in the closed position and wearing a breathing apparatus mask. The collar closure strap shall fold in half for storage with the FR loop fastener tape engaging the FR hook fastener tape.

_____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 approximately 3 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. There shall be wicking barrier constructed of Crosstech 2F moisture barrier material installed on the front closure system on the left and right side directly below the front facings to ensure continuous protection and overlap. The wicking barrier shall extend no more than a maximum of ¾ inch beyond the inner facing and false facing shall be unacceptable. The thermal liner and moisture barrier assembly shall be attached to the jacket facings by means of snap fasteners.

_____Comply _____Exception

OPTION 1

STORM FLAP

A rectangular storm flap measuring approximately 3¼ inches (6 inches for hook and dee inside/FR hook and loop fastener tape outside closure; aka #7C) wide and a minimum of 21 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 a 20 inch size #10 heavy duty high-temp smooth-gliding YKK Vislon® zipper on the jacket fronts and FR hook and loop 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 fronts. The storm flap shall close over the left and right jacket body panels and shall be secured with FR hook and loop fastener tape. A 1½ inch piece of FR 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 piece of FR 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 jacket 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 jacket. The rear of the pockets shall expand to a depth of 2 inches. *The semi-expansion pocket shall be reinforced with a layer of Kevlar® approximately 5 inches up on the inside of the pocket.* 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 approximately 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 backtacks. The pocket flaps shall be closed by means of FR hook and loop fastener tape. Two pieces of 1½ inch by 3 inch FR 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 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

HEM SNAPS

There shall be two snaps sewn to the bottom of the coat liner with two corresponding snaps sewn to Arashield tabs sewn to the shell to attach the liner to the shell.

_____ Comply _____ Exception

OPTION 1

AXTION® SLEEVES

The sleeves shall be of two-piece construction and contoured, having an upper and a lower sleeve. Both the under and upper sleeve shall be graded in proportion to the chest size. For unrestricted movement, on the underside of each sleeve there shall be two outward facing pleats located on the front and back portion of the sleeve on the shell and thermal liner. On the moisture barrier, the system will consist of two darts, rather than pleats, to allow added length in the under sleeve. The moisture barrier darts will be seam sealed to assure liquid resistance integrity.

The pleats shall expand in response to upper arm movement and shall fold in on themselves when the arms are at rest. This expansion shall allow for greater multi-directional mobility and flexibility in the shoulder and arm areas, with little restriction or jacket rise. Neither stove-pipe nor raglan-style sleeve designs will be considered acceptable.

_____Comply _____Exception

SLEEVE CUFF REINFORCEMENTS

The sleeve cuffs shall be reinforced with a layer of black leather.

The cuff reinforcements shall not be less than 2 inch 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; a single row of stitching shall be considered unacceptable. This

independent cuff provides an additional layer of protection as compared to a turned and stitched cuff. Jackets finished with a turned and stitched cuff do not provide the same level of abrasion resistance and will be considered unacceptable.

_____Comply _____Exception

WRISTLETS / SLEEVE WELLS

Each jacket shall be equipped with **Nomex® knit wristlets with thumb loop** not less than 4 inches in length and of double thickness. Nomex® knit is constructed of 96% Nomex® and 4% Spandex for shape retention. A loop of ½ inch wide black 6.0 oz. Brigade material shall be installed on each wristlet. This loop is designed to slip over the thumb and hold the wristlets from riding up the arm. The color of the wristlets shall be grey.

The wristlets shall be sewn to a piece of self material leader that is then stitched into the cuff. Four Ara-shield® 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 fasteners and one color coded Ara-shield® snap tab sewn onto the liner sleeves. One of the Ara-shield® snap tabs on the shell shall be a different color to correspond with color coded snap tabs for ease of matching the liner system to the outer shell after inspection or cleaning is completed. This configuration will ensure there is no interruption in protection between the sleeve liner and wristlet.

_____Comply _____Exception

OPTION 1

LINER SHOULDER THERMAL ENHANCEMENT

A minimum of one additional layer of thermal liner material shall be used to increase thermal insulation in the shoulder area of the liner system. This thermal enhancement layer shall drape over the top of each shoulder extending from the collar to the sleeve/shoulder seam, and 5 inches to the front, 2 inches to the back of the shoulder cap. The shoulder 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. The thermal enhancement layer shall have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

_____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 jacket and shall have one drainage eyelet in the bottom of the pocket. The pocket flap shall be constructed of two layers of outer shell material measuring approximately 3 inches longer than the depth of the pocket and approximately ¼ inch wider than the pocket. The pocket flap shall be closed by means of FR hook and loop fastener tape. A 1½ inch by 3 inch piece of FR hook fastener tape shall be installed 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 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 material to ensure that the radio is protected from the elements. The impermeable barrier material shall also be sandwiched between the two layers of outer shell material in the pocket flap for added protection. The radio pocket shall measure approximately 2 inches deep by 3.5 inches wide by 7 inches high and shall be installed on the left chest.

_____Comply _____Exception

NOTCHED RADIO POCKET FLAP

The radio pocket flap shall be notched to accommodate the radio antenna on the left side as worn.

_____Comply _____Exception

MICROPHONE STRAP

A strap shall be constructed to hold a microphone for a portable radio. It shall be sewn to the jacket at the ends only. The size of the microphone strap shall be 1 inch x 3 inches. The microphone strap shall be mounted above the radio pocket and shall be constructed of double layer outer shell material.

_____Comply _____Exception

OPTION 1

UNIVERSAL CLIP (for P.A.S.S., mic, flashlight, etc.)

A strap shall be configured to hold a personal alert device equipped with a clip holder, flashlight equipped with a clip holder, etc. The overall dimensions of the strap shall be approximately 4 ½ inches long by 1 ½ inches high and constructed of outer shell material. The outer shell material shall encase a piece of rigid leather measuring approximately 3/16 inch thick by 3 inches long by 1 ¼ inches high and centered in the outer shell material. Each end of the strap shall be attached to the outer shell with two rows of stitching. This will leave a usable area of 3 inches in length. The strap shall be mounted on right chest below snap.

_____ Comply _____ Exception

SURVIVOR FLASHLIGHT HOLDER

Each jacket shall be equipped with a "Survivor" flashlight holder. An inward facing safety hook, attached to a double layer self material strap, shall be double stitched in a vertical position to the upper chest. The inward facing safety hook will accommodate the clip portion of the flashlight. Below the safety hook will be a strap constructed of outer shell material measuring approximately 1 ¾ inches high and 9 inches wide, and will hold the barrel of the flashlight. The lower strap will be equipped with a 1 ½ inch by 2 ½ inch FR hook and loop closure at the front of the strap to facilitate easy removal of the flashlight. There shall be approximately 3 ½ inches between the upper safety hook and lower strap. The "Survivor" flashlight holder shall be sewn to the jacket on the right chest.

_____ Comply _____ Exception

INSET TORSO POCKET

Each jacket shall be equipped with two specially configured inset torso pockets under the storm flap.

_____ Comply _____ Exception

ARASHIELD ZIPPER STARTER

The jackets shall be equipped with an Arashield zipper starter. The piece of Arashield shall be installed on the bottom of the zipper as a gripper to assist in lining up the zipper.

_____ Comply _____ Exception

EMBROIDERED AMERICAN FLAG

Each jacket shall have a Nomex[®] embroidered American flag with red line that measures approximately 2½ inches by 3½ inches installed on the left sleeve.

Flags made of fabric other than Nomex[®] shall be considered unacceptable.

_____ Comply _____ Exception

OPTION 1

PANT CONSTRUCTION

BODY

The body of the shell shall be constructed of four separate body panels consisting of two front panels and two back panels. The body panels shall be shaped so as to provide a tailored fit, thereby enhancing body movement, and shall be joined together by double stitching with Nomex® thread. The body panels and seam lengths shall be graded to size to assure accurate fit in a broad range of sizes.

_____ Comply _____ Exception

SIZING

The pant 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 pant 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

LINER ACCESS OPENING (PANT)

The thermal liner and moisture barrier layers of the pant liner system shall be constructed in such a way as to allow an access opening for interior inspection, service and replacement. The thermal liner and moisture barrier layers shall be stitched together for security and prevention of inadvertent use of one layer without the other. The liner system shall be reinforced at the base of the crotch by means of a strip of additional material measuring approximately $\frac{3}{4}$ inches wide by 3 inches long. This reinforcing material shall be secured by the binding tape at the bottom of the fly opening, straddling the crotch seam. This reinforcement shall serve to prevent the liner from tearing in this high stress area, as a result of the constant donning and doffing of the pants.

The liner system of the pant shall incorporate an opening along the back of the waistline for ease in inspecting the inner layers and to facilitate performing the complete Liner Inspection. The thermal liner and moisture barrier shall be individually bound with a neoprene coated bias cut tape and joined together on each of the front panels, along the waistband from the front fly opening to side seam. The back of the liner system will be allowed to remain open with two snaps on either side of the back seam to attach the moisture barrier layer to the thermal liner layer. As described previously, the pant thermal layer system snaps directly to the independent waistband by means of nine snap fasteners. There shall be no hook and loop used to close the liner access opening.

_____ Comply _____ Exception

OPTION 1

RETROREFLECTIVE FLUORESCENT TRIM

The pant shall have a stripe of retroreflective fluorescent trim encircling each leg below the knee to comply with the requirements of NFPA #1971 in 3 inch lime/yellow 3M Scotchlite™ COMFORT Trim (Heat applied segmented L/Y borders with silver center).

Bottom of trim band shall be located approximately 3" above cuff.

_____ Comply _____ Exception

WAISTBAND

The waist area of the pants shall be reinforced on the inside with a separate piece of black aramid outer shell material, cut on the bias (diagonally). The reinforcement shall be folded in half, for a finished bottom edge and shall have a finished width of not less than approximately 1½ inches. The top edge of the waistband reinforcement shall be double stitched to the outer shell at the top of the pants. The lower edge of the waistband shall be 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 by means of nine snaps, spaced equidistant along the length of the waistband reinforcement. Inserting the liner system between the waistband reinforcement and outer shell serves to reduce the possibility of liner detachment while donning and doffing. The independent waistband construction affords greater comfort and fit than a turned and stitched method. Pants that do not include an independent waistband or are not cut on the bias will not provide the same amount of stretch to the garment and shall be considered unacceptable.

_____ Comply _____ Exception

ESCAPE/LADDER BELT WITH BELT LOOPS

The pant shall have an integrated Escape Belt, which is independently certified as meeting the belt requirements of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services, which shall serve as the exterior primary positive locking closure. The Escape belt shall be comprised of Kevlar® webbing with a hook and an adjustable D-ring closure, graded for the waist size of the pants. The hook and dee closure system of the Escape Belt also serves as the positive front closure for the pants, eliminating redundant closure systems.

The pants shall be equipped with a series of black aramid material belt loops spaced around the waist to accommodate the aramid belt. There shall be three large loops measuring approximately 4 inches high by 4 1/4 inches long and two smaller loops measuring approximately 1/2 inch wide by 3 1/2 inches long. Two of the large belt loops shall be placed on each side of the front of the pant and third on the rear of the waist, centered over the rear seam. The two smaller loops shall be placed on the rear of the pant, behind the side seams.

_____ Comply _____ Exception

OPTION 1

EXTERNAL / INTERNAL FLY FLAP

The pants 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, with a length graded to size based on waist measurement and reinforced with bartacks 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, with a length graded to size based on waist, 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 1½ inch wide piece of FR loop fastener tape quadruple stitched along the full length and through the shell material only; stitching shall not penetrate the moisture barrier insert between the two layers to insure greater thermal protection and reduced water penetration. A corresponding strip of 1½ inch wide piece of FR hook fastener tape shall be quadruple stitched to the outside right front body panel securing the fly in a closed position.

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

_____Comply _____Exception

AXTION® KNEE

The outer shell of the pant legs shall be constructed with horizontal expansion pleats in the knee area with corresponding darts in the liner to provide added fullness for increased freedom of movement and maximum flexibility. The pleats shall be folded to open outwardly towards the side seams to insure no restriction of movement. The AXTION® knee will be installed proportionate to the pant inseam, in such a manner that it falls in an anatomically correct knee location.

The thermal liner shall be constructed with four darts per leg in the front of the knee. Two will be located above the knee (one on each side) and two will be located below the knee (one on each side). On the moisture barrier, the system will consist of two darts, rather than pleats, to allow added length in the under knee. The darts in the liner provide a natural bend at the knee. The darts in the liner work in conjunction with the expansion panels in the outer shell to increase freedom of movement when kneeling, crawling, climbing stairs or ladders, etc.

_____Comply _____Exception

LINER KNEE THERMAL ENHANCEMENT

A minimum of one additional layer of specified thermal liner and one additional layer of moisture barrier material, measuring a minimum of 9 inches by 11 inches, will be sewn to the knee area of the liner system for added CCHR protection and increased thermal insulation in this high compression area.. 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. The thermal enhancement layer shall

have finished edges by means of overedging. Raw or unfinished edges shall be considered unacceptable. Thermal scraps shall not be substituted for full-cut fabric padding. Smaller CCHR reinforcements shall not be considered acceptable since they provide far less area of coverage.

_____Comply _____Exception

OPTION 1

KNEE REINFORCEMENTS

The knee area shall be reinforced with a layer of black Dragonhide® material.

The knee reinforcement shall be slightly offset to the outside of the leg to insure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure approximately 9 inches wide by 12 inches high and shall be double stitched to the outside of the outer shell in the knee area for greater strength and abrasion resistance. Knee reinforcements of a smaller size do not provide the same protective coverage and shall be considered unacceptable. The knee reinforcement specified shall be removable for replacement without opening Major A seams of the outer shell of the pant.

_____ Comply _____ Exception

PADDING UNDER KNEE REINFORCEMENTS

Padding for the knees shall be accomplished with one layer of **Silizone**® foam, sandwiched between the thermal liner and moisture barrier. The placement of Silizone® padding on the thermal versus the shell reduces bulk in the shell and also serves to protect the padding from abrasion and other wear issues that the outer shell is subject to. Pants with Silizone® knee padding on the shell as opposed to on the liner, do not provide the same level of bulk reduction and abrasion resistance and are not recommended.

_____ Comply _____ Exception

EXPANSION POCKETS

An expansion pocket, measuring approximately 2 inches deep by 10 inches wide by 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 approximately 3 inches deeper than the pocket expansion and ½ inch wider than the pocket. The pocket flaps shall be closed by means of FR hook and loop fastener tape. Two pieces of 1½ inch by 3 inch FR 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 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

EXPANSION POCKET REINFORCEMENTS

The lower half of the expansion pockets shall be reinforced on the outside with a layer of black Dragonhide® material.

_____ Comply _____ Exception

OPTION 1

PANT CUFF REINFORCEMENTS

The cuff area of the pants shall be reinforced with a layer of black Arashield material. The cuff reinforcements shall not be less than 2 inch in width and folded in half, approximately one half inside and one half outside the leg cuff for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the end of the leg for a minimum of two rows of stitching. This independent cuff provides an additional layer of protection over a hemmed cuff. Pants that are turned and stitched at the cuff, as opposed to an 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 "X" style "Padded Rip-Cord" suspenders. There will be four attachments total – 2 front, 2 back. The suspender attachments shall be constructed of black Ara-Shield® material 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 "X" style "Padded Rip-Cord" suspenders shall be specially configured for use with the pants. The main body of the suspenders shall be constructed of 2 inch wide black webbing straps. 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. 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 aramid.

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 with teeth. 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 aramid suspender attachments incorporating two snap fasteners. The aramid suspender attachments are to be threaded through the suspender attachment loops on the inside waistband of the pants. The aramid suspender attachments will then fold over and attach to themselves securing the suspender to the pants.

_____ Comply _____ Exception

AXTION® SEAT

The rise of the rear pant center back seam, from the top back of the waistband to where it intersects the inside leg seams at the crotch, shall exceed the rise at the front of the pant by approximately 2½ inches. The longer rear center back seam provides added fullness to the seat area for extreme mobility without restriction when stepping up or crouching and will be graded to size. This feature in combination with other design elements will maintain alignment of the knee directly over the knee pads when kneeling and crawling.

_____ Comply _____ Exception

OPTION 1

KEVLAR TOOL COMPARTMENTS

The pants shall be equipped with two six pack Kevlar tool compartments one in the right and one in the left expansion pocket. The tool compartments shall be used to organize tools vertically.

_____ Comply _____ Exception

REVERSE BOOT CUT

The outer shell pant 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 pant cuffs. Pants that have "cut-outs" in the back panel rather than a contoured boot cut shall be considered unacceptable.

_____ Comply _____ Exception

END OF FLAP SILIZONE

Each jacket pocket flap shall have a ½" x 8" piece of Silizone sandwiched between the two layers of outershell material for ease of pulling open the pocket flap.

_____ Comply _____ Exception

MICROPHONE STRAP

The pants shall be equipped with a microphone strap 1x3 belt loop sewn to the rear of the pant below left pocket.

_____ Comply _____ Exception

GLOBE GUARD™ – PANT

The pants shall be equipped with Globe Guard™ System at the pant cuff and at the base of the fly to reduce the introduction of foreign matter onto the wearer. This Globe Guard™ shall be constructed of two layers; one layer of yellow TecaSafe material, the second layer of a neoprene coated material.

The two layers shall be turned in and topstitched to each other, the finished guard pieces shall then be double stitched to the liner at the cuff hemlines and at the base of the crotch. The Globe Guard™s at the cuffs shall measure approximately 4 inches wide and run the full circumference of the liner cuff. The bottom of the Globe Guard™ shall encase a continuous band of an elasticized material extending the full length of the Globe Guard™. The Globe Guard™ at the crotch opening shall be an elliptical shape, measuring approximately 3 inches high and 3 ½ inches wide, and secured to the binding by two rows of stitching.

_____ Comply _____ Exception

OPTION 1

THIRD PARTY TESTING AND LISTING PROGRAM

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

Comply Exception

LABELS

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

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

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 pants to be free from defects in materials and workmanship for their serviceable life when properly used and cared for.

Comply Exception

HOOK AND LOOP SUPPORT PROGRAM

Support program shall cover hook or loop tape that has begun to fray or otherwise degrade from normal wear. This program shall remain in effect for a period of five years from the original date of manufacture of the garment. This support program shall cover the repair or replacement, without charge, of any hook and/or loop on the garments produced by the manufacturer providing the garments are otherwise serviceable.

This support program does NOT cover damage from fire, heat, chemicals, misuse, accident or negligence. Failure to properly care for garments will serve to void this support program.

Comply Exception

OPTION 1

SIZING BY VENDOR

Both male and female sizing samples shall be available.

Both male and female sizing samples shall be on hand for use when sizing. The vendor shall be available to perform all sizing requirements within 96 hours of written notice. Measuring with a tape measure is not acceptable.

_____ Comply _____ Exception

GARMENT TRAINING AND SUPPORT

OSHA requires employees be trained on the capabilities and limitations of their Personal Protective Equipment. The selected vendor shall provide the following:

On-site care and maintenance training shall be provided by the manufacturer. Training shall be in compliance with NFPA 1851, current edition, at the conclusion of which each participant shall receive a certificate of completion.

An on-site OSHA mandated training class on the Knowing the Limits of Your PPE shall be provided at no charge. The training shall include structural firefighting coat, pant and boots.

_____ Comply _____ Exception

BAR-CODE/RECORD KEEPING INTERFACE

A 1 dimensional barcode, in the interleaved 2 of 5 format shall be printed on the label of each separable layer of the garment.

This barcode shall represent the serial number of the garment. The manufacturer shall be able to provide a detailed list of each asset of a drop-shipped order, and shall include the following:

- Brand
- Order Number
- Serial Number
- Style Number
- Color
- Description
- Chest/Waist Size
- Jacket/pant Length
- Sleeve Length
- Date of Manufacture
- Mark-For Data

This information shall be able to be imported into the manufacturers web-based system designed to facilitate the organization and tracking of assets in accordance with the cleaning and inspection requirements of OSHA and NFPA 1851.

_____ Comply _____ Exception

OPTION 1

PPE RECORD KEEPING

The manufacturer shall make available and no-charge, a password protected data based backed website that does not care whose brand of PPE assets are being recorded. The website shall have the functionality to allow the manufacturer to import all of the pertinent data into the department's account so that the initial data entry by fire department personnel is eliminated.

The website shall allow for the department to use a barcode scanner, if desired, to scan the Interleaved 2 of 5 barcode found in the gear by going to the Search the Serial Number page in PPE record keeping program, and scanning the asset's barcoded serial number.

Comply Exception

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.

Comply Exception

COUNTRY OF ORIGIN

Jackets and Pants shall be manufactured in the United States.

Comply Exception