

**FRANKLIN COUNTY, KY
PROTECTIVE CLOTHING SPECIFICATIONS
NFPA 1971, 2013 EDITION**

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

COMPLIANT EXCEPTION

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

All components and composites used in the construction of garments shall be third party tested, certified and listed for compliance to NFPA 1971, 2013. The label of the third party certification organization shall denote certification.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

COMPOSITE PERFORMANCE: The garment composite, consisting of the outer shell, moisture barrier and thermal liner, shall provide a Thermal Protective Performance (TPP) of 41.9 when tested in accordance with NFPA 1971 standard.

COMPLIANT EXCEPTION

The garment composite, consisting of the outer shell, moisture barrier and thermal liner, shall provide a Total Heat Loss (THL) of 221.3 when tested in accordance with NFPA 1971 standard.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

OUTER SHELL MATERIAL: +/- 7.25 oz./sq. yd. 40% PBI®/60% KEVLAR® highly constructed rip stop weave with extremely durable FPPE water resistant Teflon® alloy reinforced with a matrix of 600 denier filament KEVLAR® cables. Color shall be natural (gold). or similar performance

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

THERMAL LINER MATERIALS: Chambray Pure NOMEX® Chambray face cloth (3.0+ oz. /sq. yd.) quilted to virgin 50% para-aramid/50% meta aramid batting weighing approximately 3.75 oz. /sq. yd. (Total weight +/- 6.75 oz. /sq. yd.) or similar performance.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

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

Trim shall be 3" Ventilated Scotchlite" Triple Trim (lime/yellow), or similar performance

Coat trim shall be applied as follows: 3" NFPA Pattern: One 3" strip shall be set full circumference at the bottom sweep of the outer shell; one 3" strip shall be set around each sleeve within 2" above the cuff; one 3" strip shall be set full circumference at the chest. Pant trim shall be applied as follows: One 3" strip set full circumference around the bottom of the cuff 3" from the bottom cuff.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

NOTE: All measurements are approximate and have a +/- tolerance of at least 1/4 inch. Positioning of parts on smaller size garments also may vary due to limited space available on smaller chest and waist sizes.

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

Do Not Remove This Label

THIS STRUCTURAL FIREFIGHTING PROTECTIVE GARMENT MEETS THE GARMENT REQUIREMENTS OF NFPA 1971, 2013 EDITION MADE IN THE U.S.A.

__ COMPLIANT

__ EXCEPTION

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

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

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

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

__ COMPLIANT

__ EXCEPTION

USER INFORMATION GUIDE: Each garment shall include a User Information Guide with information required by NFPA 1971. This guide shall include:

(a) Pre-use information:

- Safety considerations.
- Limitations of use.
- Garment marking recommendations and restrictions.
- A statement that most performance properties of the garment cannot be tested by the user in the field.
- Warranty information.

(b) Preparation for use:

- Sizing/adjustment.
- Recommended storage practices

(c) Inspection:

- Inspection frequency and details.

(d) Don/Doff:

- Donning and doffing procedures.
- Sizing and adjustment procedures.
- Interface issues.

(e) Use:

- Proper use consistent with NFPA 1500, Standard on Fire Department, Occupational Safety and Health Program, and 29 CFR 1910, 132.

(f) Maintenance and Cleaning:

- Cleaning instructions and precautions with a statement advising users not to use garments that are not thoroughly cleaned and dried.
- Inspection details.
- Maintenance criteria and methods of repair where applicable.
- Decontamination procedures for both chemical and biological contamination.

(g) Retirement and disposal:

- Retirement and disposal criteria and considerations.

(h) Drag Rescue Device (DRD)

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

___ COMPLIANT

___ EXCEPTION

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

___ COMPLIANT

___ EXCEPTION

DELUXE Coat or similar performance

COAT CONSTRUCTION: The coat shell shall be a 3-panel construction in all layers with an inverted pleat on each side where front and back body panel pieces meet. Each pleat shall begin at the back of each shoulder and shall extend vertically down the side of the coat. A combination moisture barrier/thermal liner shall include a corresponding 1" inward dynamic fold approximately 1.5" from each sleeve seam at the shoulder. This fold shall provide for coat expansion when extending arms forward and shall interface with the inverted pleats of the outer shell to maximize mobility and function of the outer shell and thermal liner. The coat shell and moisture barrier/thermal liner shall be oversized to assure proper chest fit and insure maximum mobility without restriction of the arms and shoulders. Bi-swing construction shall provide better fit, longer wear and greater comfort. When measured at the center of the back from the collar seam to the hem bottom, the coat shall measure 32", 35" in length. (Female models 29", 32" in length.) Sleeves shall be of full length and of shoulder insert, 2-panel type design.

COMPLIANT EXCEPTION

MOISTURE BARRIER / THERMAL LINER CONSTRUCTION: Design shall be compatible with the outer shell so that the liner does not buckle, pull, or otherwise restrict body motion. The left and right fronts of the moisture barrier/thermal liner shall be attached to the facings at the front closure of the outer shell. The moisture barrier/thermal liner shall be secured to the outer shell collar such that when donning the coat an arm may not be accidentally caught between the outer shell and its inner linings. The liner shall have one 8.5"x 8.5" internal pocket which shall be made of black outer shell material. The liner pocket shall be located on the left side of coat liner.

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

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

COAT LINER INSPECTION SYSTEM: There shall be a 10" opening located on the coat liner system. This opening will provide the ability to completely invert the coat liner to properly view the integrity of the entire liner system. There shall be one piece 1" x 9" FR loop sewn to the back side of the liner system with a piece of 1" x 9" FR hook sewn to the inside of the outer shell to ensure proper alignment when installing the liner system into the outer shell. This Liner Inspection System is completely hidden when the liner is properly installed into the outer shell.

COMPLIANT EXCEPTION

COLLAR: The 3" split collar shall consist of two piece construction shaped for comfort. The collar shall be configured such that when the collar is raised it shall remain standing while providing continuous thermal and moisture protection around the neck and face. To ensure this protection, the two layers of outer shell collar shall be fully lined with a layer of CROSSTECH® Black or similar performance. The shell collar shall provide proper interface with the liner to insure no moisture penetration through the collar seam to the inside of coat. The shell collar shall have multiple pieces ¾" hook along top edge for liner attachment.

The liner collar shall be a layer of self-material and a layer of CROSSTECH® Black or similar performance. The design shall be compatible with the outer shell so that the liner does not buckle, pull, or otherwise restrict body motion. The left and right fronts of the liner collar shall be attached to the facings at the front closure of the outer shell. The neck of the liner collar shall be secured to the neck of the outer shell collar such that when donning the coat an arm may not be accidentally caught between the outer shell and its inner linings. A 4" wide CROSSTECH® Black and 1.5" self-material extension shall be sewn the full length of the neck with multiple pieces of ½" loop for attachment to shell collar. The self-material extension shall overlap the shell collar to prevent exposure of the hook and loop. Collar closure shall be provided by FR hook and loop 1.5" x 4", with hook portion sewn on right side of collar, and loop portion sewn on left, set horizontal. The collar shall be attached to the liner facing using ¾" hook. Collar shall be of such design so as not to interfere with SCBA face masks, or helmet.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

DRAG RESCUE DEVICE (DRD): The Fire Fighter Recovery Harness" shall be constructed of a one and one-half inch wide KEVLAR® strap that shall be installed between the outer shell and the thermal liner. This harness shall have a hand loop (16" in circumference) that exits the outer shell through a 2" polymer coated aramid reinforced slot on the back of the coat just below the collar and is held in place by means of a piece of 1.5" x 2" loop on the strap and a piece of 1" x 3.5" loop attached to the outer shell. This strap is then secured under a 2.5" x 4.25" flap that is sewn in at the neck collar area. One piece of 1" x 3.5" hook shall be set horizontally on shell to align with one piece of 1" x 3.5" loop set horizontally to the underside of the flap. The harness is also held in proper alignment by means of a piece of 2" x 2" loop placed on the inside of the outer shell underneath the chest trim that corresponds to a piece of 1.5" x 2" hook located on the harness. Two 1" x 3.5" self-fabric straps with 1" x 2" hook on one end and 1" x 2" loop on other end shall be set inside the coat in the shoulder cap area to keep straps in proper position for use.

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

COMPLIANT EXCEPTION

THERMAL REINFORCED YOKE: A layer of Semper Dri™ (3.0 oz. *Isq.* yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to araflo/E-89™ (Total weight +/ - 6.0-6.8 oz. *Isq.* yd)) shall be positioned

between the moisture barrier and thermal liner for extra thermal protection in a high heat and compression area of the coat. It shall be sewn to the inside of the upper back portion of the thermal liner across the upper back from the back shoulder and collar seams 7" down, over the tops of shoulders and down the front approximately 4" ending at the armhole.

COMPLIANT EXCEPTION

SHOULDER CAPS: A four inch wide area at the top of the shoulders extending six inches from the collar seam shall be capped with gray split cowhide leather for abrasion resistance and thermal protection.

COMPLIANT EXCEPTION

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

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

COMPLIANT EXCEPTION

The sleeve shall have an insert throughout all layers that shall provide a natural bend in the sleeve. This insert shall be set in the back of each sleeve and shall be a shortened football shape, 6" wide in the middle and 3" wide at the seams. The outer shell insert shall consist of gray split cowhide leather for abrasion resistance and thermal protection.

COMPLIANT EXCEPTION

SLEEVE WELL: A combination Semper Dri™ (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to araflo/E-89™ (Total weight +/- 6.0-6.8 oz./sq. yd)) and one layer of breathable CROSSTECH® Black (Type 2F) leader shall be sewn no more than 1" back from the combination liner sleeve end to form a sleeve well. One male snap and one .75" wide strip of FR loop shall be sewn full circumference to the end of the thermal liner/CROSSTECH® Black (Type 2F) moisture barrier leader to help secure the combination liner to the outer shell. This sleeve well shall prevent water and hazardous materials from entering the sleeve when arms are in a raised position.

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

COMPLIANT EXCEPTION

WRISTLETS: An internal wristlet shall consist of a 2-ply KEVLAR Spandex knitted not less than 4". Wristlets shall be double stitched and bound to the moisture barrier/thermal liner providing extended thermal and slash protection.

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

STORM FLAP: A storm flap measuring not less than 5" wide, nor less than 22" in length shall be set on the outside of the right side of the coat opening for maximum thermal protection and clear drainage. The inner lining of the storm flap shall be Gore RT7100™ PTFE moisture barrier meeting all requirements for moisture barriers sandwiched between two layers of outer shell fabric.

COMPLIANT EXCEPTION

FRONT/STORM FLAP CLOSURES: Hook & Dee Rings / Hook and Loop Attachment: The front closure shall consist of four snap hooks set with three leather reinforced rivets at the extreme right side of the coat front underneath the storm flap. Opposite of each snap hook, a corresponding leather-reinforced dee ring set to the leading edge of the left coat front with two rivets. The storm flap closure shall consist of 2" wide loop sewn with four rows lockstitch on the inner side of the storm flap and 2" wide hook sewn with four rows lockstitch attachment on the left coat front. The hook and loop closure shall extend the full length of the outer storm flap eliminating all exposed frontal hardware.

COMPLIANT EXCEPTION

FULL BELLOWS POCKETS: Two 8" wide x 8" deep outside full bellows pockets that expand by means of side and bottom gussets to a thickness of 2" in front and back shall be attached one to each front panel at the hem. Pockets shall be reinforced with grey leather 5" upon the outside of the pocket and 3" up inside on shell (coat front) which forms the backside of the pocket.

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket comers and top comers of flap reinforced with bar tacks for additional strength. Drainage of moisture will be provided by brass eyelets. Pocket flaps shall be 9"x 5", folded and stitched at 1.5" width to correspond with pocket gussets. The flap shall extend 3" down to give a creased and contoured pocket flap. A hook and loop fastener closure system shall be set with 1.5" x 8" loop fastener horizontally on the pocket and (3) pieces of 1.5" x 3" hook fastener vertically on the underside of the flap.

COMPLIANT

EXCEPTION

FULL BELLOW Radio POCKET One 3" wide x 7" deep outside full bellows pocket that expands by means of side and bottom gussets to a thickness of 2" in front and back shall be attached one to left front panel at the breast area.

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket comers and top comers of flap reinforced with bar tacks for additional strength. Drainage of moisture will be provided by brass eyelets. Pocket flaps shall be folded and stitched at 1.5" width to correspond with pocket gussets. The flap shall extend 3" down to give a creased and contoured pocket flap. The closure system will be similar to the closure system for the other pockets used on the coat.

COMPLIANT

EXCEPTION

SUPER DELUXE™ PANT or similar performance

PANT CONSTRUCTION: The multi-piece, low-rise waist pant is designed to be worn with any 32" or longer coat.

MOISTURE BARRIER/THERMAL LINER CONSTRUCTION: Design shall be compatible with the outer shell so that the liner does not buckle, pull, or otherwise restrict body motion. To deter the wicking of moisture up the thermal liner leg the bottom nine inches of each thermal leg shall be constructed of Semper Dri™ (3.0 oz./sq. yd. Teflon® treated Chambray (NOMEX® spun) face cloth quilted to araflo / E-89™ (Total weight +/- 6.0-6.8 oz./sq. yd)). The waist of the moisture barrier/thermal liner shall be secured to the waist of the outer shell such that when donning the pant a leg may not be accidentally caught between the outer shell and its inner linings along the waist and between the legs of the pant. For added thermal protection in the knee, an additional layer of uninterrupted 1/8" thick, fire resistant closed-cell foam shall be positioned between the moisture barrier and Thermal liner.

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

COMPLIANT EXCEPTION

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

COMPLIANT EXCEPTION

PANT LINER INSPECTION SYSTEM: There shall be an opening located on the pant liner system separating the thermal barrier and moisture barrier, approximately 10" in length. This opening will provide the ability to completely invert the pant liner to properly view the integrity of the entire liner system. There shall be a piece of 1" x 3" FR loop sewn to the moisture barrier 3" over from beginning of opening and a corresponding piece of 1" x 3" FR hook sewn to the inside of the outer shell to ensure proper alignment when installing the liner system into the outer shell. This Liner Inspection System is completely hidden when the liner is properly installed into the outer shell.

COMPLIANT EXCEPTION

STORM FLY/CLOSURE: The outer shell shall have an overlapping fly front running the full length of the fly on the left side. The flap shall not be less than 2.5" wide at the waistband. The bottom of the fly shall be reinforced with one 42-stitch bartack. The storm fly shall be outer shell material, lined with a 3.5" strip CROSSTECH® Black (Type 2F) moisture barrier material to prevent wicking.

Hook and loop in Hook & Dee Ring outside fly closure: The outer shell shall have an overlapping fly front running the full length of the fly on the left side. The flap shall not be less than 2.5" wide at the waistband. The bottom of the fly shall be reinforced with one 42-stitch bartack.

The storm fly shall be held closed along its length by means of a hook and loop fastener closure 1.5" minimum width sewn with four rows lockstitch, along the leading edge for a distance of not less than 6" from the bottom of the fly closure to the waist area for proper alignment and secure closure. A hook and dee ring closure shall be used for quick one motion closing at the waist. The hook shall be 2.5" in length, made of a zinc non-ferrous metal alloy and weigh 1.2 oz. +/- 5%. It shall be securely fastened to the pant by means of a 5/8" wide, treated leather take-up strap looped through the rear of the buckle and triple riveted to the pant shell with leather backed rivets. The dee shall be made of a non-ferrous metal alloy 2" long x 1 1/16" wide and secured by two leather-backed rivets to the leading edge of fly flap.

COMPLIANT

EXCEPTION

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

COMPLIANT

EXCEPTION

WAISTBAND: The waist of the pants shall be reinforced on the inside with two-ply of outer shell material not less than 1.5" in width. The pant waist shall be turned under to provide double material strength with the Independent waistband, which shall then be double stitched to the outer shell. Eight suspender buttons shall be appropriately spaced around the waistband to accommodate the use of suspenders.

COMPLIANT

EXCEPTION

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

COMPLIANT

EXCEPTION

RADIAL INSEAM BAND: The pant inseam shall incorporate a comfort/mobility design in all layers. The banded pant insert shall run continuously from the top of the mobile knee of one leg, through the crotch, to the top of the mobile knee of the opposite leg. This design eliminates crotch seams therefore eliminating crotch seam failure. This design also provides a more comfortable fit and increased mobility while decreasing bunching of materials.

COMPLIANT

EXCEPTION

The knee shall incorporate a comfort/mobility design in all layers. This design shall allow for a natural bending motion of the knee. The knee shall be gray split cowhide leather material and measure 9" across the bottom, not less than 7" on the sides and gradually increase to 12" at the center point at the apex. The apex of the knee shall allow for not less than a 1.5" bellows at the center. The radial seam shall provide a gusset

that the knee can fall into when crawling, climbing, bending, kneeling, etc. The bottom of the mobile knee shall be placed not less than 10" from the cuff to fall anatomically correct.

KNEE PADDING: In addition to reinforcement, knees shall be padded using one layer of uninterrupted 1/8" thick, fire retardant closed-cell foam. The reinforcement material shall be oriented between the outer shell and knee insert reinforcement.

COMPLIANT

EXCEPTION

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

COMPLIANT

EXCEPTION

FULL BELLOWS POCKETS: Two 8" wide x 8" deep outside full bellows pockets that expand by means of side and bottom gussets to a thickness of 2" in front and back shall be attached one to each fore thigh. Pockets shall be reinforced with grey leather 5" up on the outside of the pocket and 3" up inside on shell (pant leg) which forms the backside of the pocket.

Pocket and flap shall be set with stitch 301, seam Ssb-2 with the top and bottom pocket corners and top corners of flap reinforced with bar tacks for additional strength. Drainage of moisture to be provided by brass eyelets. Pocket flaps shall be 9"x 5", folded and stitched at 1.5" width to correspond with pocket gussets. The flap shall extend 3" down to give a creased and contoured pocket flap. A hook and loop fastener closure system shall be set with 1.5" x 8" loop fastener horizontally on the pocket and (3) pieces of 1.5" x 3" hook fastener vertically on the underside of the flap.

COMPLIANT

EXCEPTION

QUICK ADJUST H-BACK SUSPENDERS WITH TRADITIONAL ATTACHMENTS

MODEL NO SB342

SCOPE

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

DESIGN

Two **8" front pull straps** shall be constructed as follows: 2" wide non-elastic polyester webbing shall be fed through 2" metal loops and secured with a two-needle lock-stitch at one end. Black military finish **steel double dee ring** shall be fed through the webbing. The other end of the webbing shall be fed through a 2" wide thermo-plastic dee ring and secured with a two-needle lock-stitch. The dee ring shall function as a pull strap for easily adjusting the suspenders for proper fit.

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

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

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

SHOULDER PADS

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

LIFETIME WARRANTY

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

* Also available in 34", 36" & 48" lengths

___ COMPLIANT

___ EXCEPTION