TOWN OF
NORTH KINGSTOWN, RHODE ISLAND

FIRE DEPARTMENT
PUBLIC SAFETY BUILDING
8150 POST ROAD
NORTH KINGSTOWN, R.I. 02852

401-294-3346
401-294-4180 FAX

INVITATION FOR BIDS
North Kingstown Fire Department
Personal Protective Equipment

Sealed proposals for the above will be accepted in the Office of the Purchasing Agent, Town Hall, 80 Boston Neck Road, North Kingstown, RI 02852 until 10:00 AM on Thursday June 9, 2016, and will then be publicly opened and read aloud.
Send bids to : NORTH KINGSTOWN FINANCE DEPARTMENT, Attn: Francine Hall.

The bid will be evaluated as to R.I.G.L 45-55-5, "Competitive sealed bidding and the award shall be made on the basis of the lowest evaluated or responsive bid price"

As part of this bid we are including:

14-Turnout Coats (black)

2- Turnout Coats (White)

14-Turnout Pants (Black)

11- Leather Firefighting Boots

20- Pairs of Firefighting Gloves

12- Firefighting Hoods

8- Firefighting Helmets

Any questions on the above listed equipment, please contract Scott Kettelle, Fire Chief at 401-294-3346 ext. 7200.

GENERAL SPECIFICATIONS
PROTECTIVE JACKET AND PANTS
FOR STRUCTURAL FIRE FIGHTING

5/16/2016
North Kingstown Fire Dept.
8150 Post Road
North Kingstown, Rhode Island, 02852

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 firefighting. 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 **"BLACK ADVANCE™ PCA (Producer Colored Aramid)"** 50/50 Kevlar®/Nomex® blend material with an approximate weight of 7.0 oz. per square yard. 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 black. **Bids offering this shell material without the SST™ will not be considered. An alternate bid of black Advance in place of the black Advance™ PCA will not be considered.**

_____Comply _____Exception

THERMAL INSULATING LINER - JACKET AND PANTS

The thermal liner shall be constructed of 7.2 oz. per square yard TENCATE **"ARALITE® NP"**; one layer of 3.8 oz. per square yard aramid blend non-woven needle-punch batt, quilt stitched to a 3.4 oz. per square yard spun meta-aramid face cloth, teal in color, with Wickwell™ Plus Finish A 7 inch by 9-inch pocket, constructed of self-material and lined with moisture barrier material, shall be affixed to the inside of the jacket thermal liner on the left side by means of a single needle 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

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 3.3 ounce per square yard 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. One strips of 5/8-inch-wide FR Velcro® fastener tape shall secure the moisture barrier system to the shell. In addition, 6 snap fasteners shall secure the thermal liner/moisture barrier to the outer shell along the length of the neck line under the top most collar (see Collar section). Snaps shall be protected from exterior heat by moisture barrier fabric. The remainder of the thermal liner/moisture barrier shall be secured with snap fasteners appropriately spaced on each jacket facing and snap fasteners at each sleeve end. There shall also be 2 snap fasteners at the bottom of the MEB, securing the bottom of the shell to the liner system. 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 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

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. Stitching in all seams shall be continuous. 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.

The hem of the jacket and liner system shall be constructed with the **METRO™ EXTENDED BACK (MEB)** incorporating all 3-layers of the system (outer shell, thermal liner & moisture barrier). The extended back will be double stitched to the rear hem and extend approximately 6 inches lower in the back than the front of the jacket providing and maintaining proper overlap when bending or crawling.

The bottom of the 6-inch extended outer shell back will be complete with trim along the bottom allowing room for lettering above the trim at the top of the extended back.

_____Comply _____Exception

LOGOS

The garment brand shall be identified by means of red FR Nomex thread embroidery on the top of the right collar denoting "GLOBE" as the manufacturer. There shall be a reflective label specific to the garment style, measuring 1inch wide by 4 inches long, installed on the left pocket flap.

_____Comply _____Except

DRAG RESCUE DEVICE (DRD)

A Firefighter Drag Rescue Device shall be installed in each jacket. The ends of a 1½ inch wide strap, constructed of black Kevlar® with a red Nomex® center stripe, will be sewn together to form a continuous loop. The strap will 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 will be covered by an outside flap of shell material, with beveled corners 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

LINER ACCESS OPENING - JACKET

The thermal liner and moisture barrier shall be completely removable from the jacket shell. on strips of ⅝ inch wide FR Velcro® fastener tape shall secure the thermal liner/moisture barrier to the outer shell along the length of the neckline under the collar. A series of 6 snap fasteners, to minimize gaps, shall secure the thermal liner/moisture barrier to the outer shell along the length of the neckline under the collar. This opening shall run the full length of the collar for the purpose of inspecting the inner surfaces of the jacket liner system. The remainder of the thermal liner/moisture barrier shall be secured with a minimum of four snap fasteners appropriately spaced on each jacket facing and four Ara-Shield® snap fasteners at each sleeve end. The outside perimeter of the AXTION® liner moisture barrier and thermal liner layers shall be bound together along the side and bottom edges with a bias-cut Neoprene coated cotton/polyester binding for a finished appearance that prevents fraying and wicking of contaminants. Stitching used to secure the thermal liner and moisture barrier in place of the Neoprene shall not be considered since stitching is not able to provide the same level of abrasion resistance.

_____Comply _____Exception

SIZING

The standard coat design shall be 6 inches 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 jacket MEB. Each jacket length shall be determined by each individual's torso length to provide the jacket to pant interface as defined by NFPA 1500. Jacket design must interface properly with standard waist high turnout pants. To facilitate various body types the front jacket lengths shall be provided in the following lengths:

29 inches long (standard)
29 inches long (women's)
32 inches long (men's)
35 inches long (men's)

The jacket shall be available 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. Sizing specifically for women shall also be available.

_____Comply _____Exception

RETROREFLECTIVE FLUORESCENT TRIM

The retroreflective fluorescent trim shall be lime/yellow 3M Scotchlite™Triple Trim (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

REINFORCED TRIM STITCHING

All reflective trim is secured to the outer shell with Nomex® thread, using a locking chain stitch protected by our exclusive TrimTrax® system. Developed exclusively by Globe Manufacturing Co., LLC. this strip of 3/32-inch strong, durable, flame resistant black Kevlar® cording provides a bed for the stitching along each edge of the retroreflective fluorescent trim surface and affords extra protection for the thread from abrasion. TrimTrax® has been proven to be 5 to 7 times more durable than single or even double rows of stitching, significantly reducing maintenance costs and providing more value and a longer service life. Two rows of stitching used to attach the trim in place of the TrimTrax® shall be considered an unacceptable alternative, since it has been proven that the two rows of stitching have insignificant impact on wear life. All trim ends shall be securely sewn into a seam for a clean finished appearance.

_____Comply _____Exception

SEWN ON RETROREFLECTIVE LETTERING

Each jacket shall have 3" lime/yellow 3M Scotchlite™ lettering on Row A reading: N K F D.

_____Comply _____Exception

Each jacket shall have 3" lime/yellow 3M Scotchlite™ lettering on Row G of the Metro Extended Back Panel reading the Firefighters last name.

_____Comply _____Exception

Each jacket shall have 3" lime/yellow 3M Scotchlite™ numbers on the upper left sleeve with the firefighters assigned I.D. number.

_____Comply _____Exception

COLLAR & FREE HANGING THROAT TAB

The collar shall consist of a minimum four-layer construction and be of one-piece design. There shall be two layers of specified moisture barrier material sandwiched in between (see Moisture Barrier section) two layers of outer shell fabric.. 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, while maintaining thermal protection. 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 outershell and moisture barrier shall be joined to the body panels with a minimum of two rows of stitching. Inside the collar, above the rear seam where the collar moisture barrier is joined to the shell, there shall be a full strip of ⅝ inch wide FR Velcro® loop fastener tape running the full length of the collar on the moisture barrier , and a corresponding piece of ⅝ inch wide FR Velcro® hook fastener tape running the full length of the collar on the outer shell. The collar 's inside outershell and moisture barrier layer shall have 6 snap fasteners spaced equidistant, to minimize gaps on lower edge of the collar. There shell be a series of six snap fasteners on the thermal liner to engage the snaps on the collar, thus enclosing

the liner access opening under the shell collar. These snap shall be installed such that they do not penetrate from the outer shell through to the inner layers. The top of the thermal liner and moisture barrier shall be sandwiched between the underside of the top collar shell fabric and moisture barrier material, and the bottom collar shell fabric and moisture barrier material so as to reduce the possibility of liner detachment while donning and doffing. A self-material fabric hanger loop shall be sewn at the top of collar. The throat tab shall 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 2½ inches wide at the center tapering to 1½ inches at each end with a total length of approximately 8½ 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 Velcro® hook and loop fastener tape. The FR Velcro® 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 Velcro® loop fastener tape shall be sewn horizontally to the inside leading end of the throat tab and a 1 inch by 3 inch piece of FR Velcro® hook fastener tape shall be sewn horizontally to the opposite end of the throat tab. A corresponding piece of FR Velcro® hook fastener tape measuring 1½ inches 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 Velcro® loop fastener tape engaging the FR Velcro® 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 2½ inches wide, extend from collar to hem, and be double stitched to the underside of the outer shell at the leading edges of the front body panels. A breathable moisture barrier material shall be sewn to the jacket facings and configured such that it is sandwiched between the jacket facing and the inside of the respective body panel. The breathable film side shall face inward to protect it. 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" 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

STORM FLAP AND JACKET FRONT CLOSURE SYSTEM

The jacket shall be closed by means of **(zipper and FR Velcro® hook & loop tape; aka #8C)** a 22-inch size #10 heavy duty high-temp smooth-gliding YKK Vislon® zipper on the jacket fronts and FR Velcro® 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 facings. The storm flap shall close over the left and right jacket body panels and shall be secured with FR Velcro® hook and loop fastener tape. A 1½ inch by 24-inch piece of FR Velcro® loop fastener tape shall be installed along the leading edge of the storm flap on the underside with four rows of stitching. A corresponding 1½ inch by 23-inch piece of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the front body panel and positioned to engage the loop fastener tape when the storm flap is closed over the front of the jacket.

_____Comply _____Exception

DUAL ACTION FLEECE LINED HAND WARMER POCKETS

Each jacket will be equipped with two pockets: one on the left side and one on the right side. The pockets shall be located at the bottom of the jacket near the storm flap and be double stitched to the respective body panels. The lower pocket corners shall be stitched in such a way that a small diagonal opening is left for complete water drainage. The lower half of the pocket shall be reinforced with a layer of Kevlar® material on the inside. The pockets shall measure 9 inches wide by 9 inches high and be accessed from the top. Each pocket will be constructed with a two pleats installed vertically for the full height of the pocket to provide expansion capability. The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material, and shall measure 3 inches deep and ½ inch wider than the pocket. A piece of 1½ inch by 3-inch FR Velcro® hook and loop fastener tape shall secure each flap in the closed position. The upper pocket corners and pocket flaps shall be reinforced with backtacks. 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

SLEEVES

The sleeves shall be of two-panel construction, contoured, drop shoulder design. The outer and under sleeve panels shall be double stitched together with Nomex® thread. The sleeves shall be contoured (curved) to follow the natural shape of the human arm unlike straight, tubular sleeve configurations. The drop shoulder design, along with the contoured sleeves shall provide for a high degree of uninhibited arm and shoulder movement. The same contoured, drop shoulder design shall be used in all layers of the garment (shell, moisture barrier, and thermal liner).

_____Comply _____Exception

SLEEVE CUFF REINFORCEMENTS

The sleeve cuffs shall be reinforced with an extra layer of outer shell 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 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® hand and wrist guards** (over the hand) not less than 7 inches in length and of double thickness. A separate thumbhole with an approximate diameter of 2 inches shall be recessed approximately 1 inch from the leading edge. Nomex® knit is constructed of 96% Nomex® and 4% Spandex for shape retention. The color of the wristlets shall be grey. The wristlets shall be sewn to **(Double Sleeve Well – as on CLASSIX)** flame resistant neoprene coated cotton/polyester impermeable barrier material, which in turn shall be sewn to the inside of the sleeve shell approximately five inches from the sleeve cuff. This sleeve well configuration serves to prevent water and other hazardous elements from entering the sleeves when the arms are raised. The neoprene barrier material shall also line the inside of the sleeve shell from the cuff to a point approximately five inches up, where it joins the sleeve well and is double stitched to the shell. 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 snaps in the liner sleeves. One of the Ara-shield® snap tabs shall be a different color in the liner 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

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, down the front a minimum 2 inches from the juncture of the collar down the back to a depth of a minimum of 2 inches to provide greater CCHR protection in this high compression area. 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 5 inches deep and ¼ inch wider than the pocket. The pocket flap shall be closed by means of FR Velcro® fastener tape. A 1½ inch by 3-inch piece of FR Velcro® 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 Velcro® loop fastener tape shall be installed horizontally on the outside of the pocket near the top center and positioned to engage the hook fastener tape. In addition, the entire inside of the pocket shall be lined with neoprene coated cotton/polyester impermeable barrier material to ensure that the radio is protected from the elements. The 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 3" inches deep by 3.5 inches wide by 9 inches high or pocket designed to fit a Motorola XTS 1500 and shall be installed on the left chest.
Note: radio pocket 6-inch and over in height requires trim.

_____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 STRAPS

There shall be 2 mic straps. These straps 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 straps shall be 1-inch x 3 inches. One microphone strap shall be mounted above the radio pocket on the left chest and the other shall be centered on the storm flap, 3" down from the top of the storm flap and shall be constructed of double layer outer shell material.

_____Comply _____Exception

SUNLANCE FLASHLIGHT HOLDER

Each jacket shall be equipped with two specially configured straps to hold a "Sunlance" flashlight. The top strap shall measure approximately 1-inch-high and 3 inches wide and will accommodate the clip portion of the flashlight. The lower strap shall measure approximately 2½ inches high and 9 inches wide and will hold the barrel of the flashlight. The lower strap will be equipped with a 1½ inch by 2½ inch FR Velcro® closure at the front of the strap to facilitate easy removal of the flashlight. There shall be approximately ¾ inch between the upper and lower strap. The "Sunlance" flashlight holder shall be sewn to the jacket on the right chest.

_____Comply _____Exception

EMBROIDERED AMERICAN FLAG – RIGHT SLEEVE

Each jacket shall have a Nomex® embroidered American flag that measures approximately 2½ inches high by 3½ inches wide. Per Military protocol the field of stars shall be to the top right corner for installation on the right sleeve. Flags made of fabric other than Nomex® shall be considered unacceptable.

_____Comply _____Exception

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

LINER ACCESS OPENING (PANT)

The combined moisture barrier and the thermal liner shall be completely removable from the pant. The thermal liner and moisture barrier layers of the liner system shall be stitched together and bound around the cuffs and at the top of the waist. The binding shall be of Bias-Cut neoprene coated cotton/polyester material for a finished appearance that prevents fraying and wicking of contaminants. The liner system of the pant shall incorporate a full length opening from the top left of the fly to the top right of the fly. This opening shall provide ease in inspecting the inner layers as well as performing the complete liner inspection. The bottom of the liner fly opening shall have a reinforcement of black Nomex® twill, on both the thermal and moisture barrier layers, which serves to prevent the liner from tearing in this area which is highly stressed as a result of the constant donning and doffing of the pants. Bartacking reinforcements in this area shall not be acceptable. As described previously, the pant thermal layer 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

SIZING

The pants 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

RETROREFLECTIVE FLUORESCENT TRIM

The pants 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™ Triple Trim (L/Y borders with silver center). Bottom of trim band shall be located approximately 3" above cuff.

_____Comply _____Exception

SEWN ON RETROREFLECTIVE LETTERING

Each pant shall have 3" lime/yellow 3M Scotchlite™ numbers on the body of the right pant pocket with the firefighters assigned I.D. number.

_____Comply _____Exception

REINFORCED TRIM STITCHING

All reflective trim is secured to the outer shell with Nomex® thread, using a locking chain stitch protected by our exclusive TrimTrax® system. Developed exclusively by Globe Manufacturing Co., LLC. this strip of 3/32-inch strong, durable, flame resistant black Kevlar® cording provides a bed for the stitching along each edge of the retroreflective fluorescent trim surface and affords extra protection for the thread from abrasion. TrimTrax® has been proven to be 5 to 7 times more durable than single or even double rows of stitching, significantly reducing maintenance costs and providing more value and a longer service life. Two rows of stitching used to attach the trim in place of the TrimTrax® shall be considered an unacceptable alternative, since it has been proven that the two rows of stitching have insignificant impact on wear life. All trim ends shall be securely sewn into a seam for a clean finished appearance.

_____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 not less than approximately 1½ inches in width. Double layered outer shell material shall be sewn to the back of the waistband as a reinforcement. 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 so as to be sandwiched between the waistband reinforcement and outer shell to reduce the possibility of liner detachment while donning and to avoid pass through of snaps from the outer shell to the inner liner.

_____Comply _____Exception

TAKE UP STRAPS

The pants shall be equipped with two take up straps. The straps shall be constructed of approximately ½ inch wide self-material and be positioned in the waist area on the outside of the garment; one on each side. Each take up strap shall be comprised of two sub-component straps. The pull strap shall measure approximately 4 inches long, folded back through a metal buckle. The buckle shall point toward the front. The adjustment strap component shall measure approximately 8 inches long (finished dimension). The adjustment strap component shall be inserted through the buckle and the ends shall be stitched to the pant. The take up strap pull-tabs shall pull toward the front to tighten. This shall allow for approximately 4 inches of adjustment per strap (8 inches overall).

_____Comply _____Exception

PANT CLOSURE SYSTEM

The exterior primary positive locking closure shall be an inward facing metal safety hook and dee ring. The safety hook shall be attached to a leather strap that is triple riveted to the right front body panel in the waist area. A leather backed dee ring shall be riveted to the leading edge of the fly flap near the top. The snap hook shall engage the dee ring located on the fly flap when in the closed position. The internal fly flap closure shall consist of (standard FR Velcro®) 1½ inch wide by full-length FR Velcro® hook and loop fastener tape. The FR Velcro® loop portion shall be sewn with four rows of stitching to the inside of the leading edge of the external fly flap. The corresponding portion of FR Velcro® hook fastener tape shall be sewn with four rows of stitching to the right front body panel positioned to engage the loop portion when the external fly flap is in the closed position.

_____Comply _____Exception

BELT LOOPS

The pants shall be equipped with a series of outer shell material belt loops spaced around the waist to accommodate an escape belt.

_____Comply _____Exception

ESCAPE BELT

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. 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.

_____Comply _____Exception

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 ¾ inches wide, with a length graded to size based on waist measurement and reinforced with backtacks 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 Velcro® 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 Velcro® 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

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 7 inches by 10 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

KNEE REINFORCEMENTS

The knee area shall be reinforced with a layer of black Dragonhide® material. The knee reinforcement shall be centered on the leg to insure proper coverage when bending, kneeling and crawling. The knee reinforcements shall measure 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

without opening up any 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 sewn to the liner, sandwiched between the thermal liner and moisture barrier.

_____Comply _____Exception

EXPANSION (BELLOWS) POCKETS (Left)

One 2-inch-deep by 10-inch-wide by 10-inch bellows pockets shall be placed over the outer leg seams at thigh level. The pockets shall be sewn to the pant with two rows of lock stitching and shall provide two aluminum eyelets, installed at the bottom of each pocket, for water drainage. *Each pocket shall be reinforced with an additional layer of outer shell material sewn to the inside.* The pocket flaps shall be rectangular in shape, constructed of two layers of outer shell material and double stitched to the outer shell. One piece of 1½ inch by 3-inch FR hook fastener tape on the inside of each pocket flap on each side. One piece of corresponding 1½ inch by 3-inch FR loop fastener tape shall be installed horizontally on the outside of each side of pocket near the top and positioned to engage the hook fastener tape. Each pocket flap shall be reinforced with bartacks at the uppermost corners.

_____Comply _____Exception

EXPANSION (BELLOWS) POCKETS (Right)

One 2-inch-deep x 10-inch-wide x 10-inch bellows pockets shall be placed over the outer leg seam at thigh level. The pocket shall be sewn to the pant with two rows of lock stitching and shall provide two aluminum eyelets, installed at the bottom of each pocket, for water drainage. *Each pocket shall be reinforced with an additional layer of outer shell material sewn to the inside.* The pocket flap shall be rectangular in shape and measure a minimum of 6 inches by a minimum of 11 inches, constructed of two layers of outer shell material and double stitched to the outer shell. Three pieces of 1½ inch by approximately 5-inch FR Velcro® hook fastener tape shall be installed vertically on the inside of each pocket flap (one each side and one in the middle). One continuous piece of corresponding approximately1 ½ inch by 9-inch FR loop fastener tape shall be installed horizontally on the outside of the pocket near the top and positioned to engage the hook fastener tape. The pocket flap shall be reinforced with bartacks at the uppermost corners. A 2-piece loop constructed of a double layer of outer shell material will be installed under the front edge of the pocket flap. The top and bottom of the loop will attach to each other with a 1-inch x 1-inch FR Velcro® hook & loop fastener tape sewn to ends. Inside the pocket, a strap measuring 1½ inches by 9½ inches (when Velcro® is engaged) shall run the full vertical height of the pocket where it will secure at the top with hook and loop fastener tape. A second strap shall be installed horizontally at the top of the pocket. This strap will measure 1 inch by 4 inches and shall be sewn at one end and attach at the other end with hook and loop fastener tape. The straps are specially designed to secure the contents of the pocket and allow for quick release.

_____Comply _____Exception

PANT CUFF REINFORCEMENTS

The cuff area of the pants shall be reinforced with a layer of black Dragonhide® material The cuff reinforcement shall not be less than 2 inch in width and folded in half, approximately one half inside and one half outside the end of the legs for greater strength and abrasion resistance. The cuff reinforcement shall be double stitched to the outer shell 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 "H" style "Padded Rip-Cord" suspenders. There will be four attachments total – 2 front, 2 back. The suspender attachments shall be constructed of a double layer of black aramid measuring approximately ½ inch wide by 3-inches long. They shall be sewn in a horizontal position on the ends only to form a loop. The appearance will be much like a horizontal belt loop to capture the suspender ends.

A pair of "H" style "Padded Rip-Cord" suspenders shall be specially configured for use with the 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, forming the "H". This shall prevent the suspenders from slipping off the shoulders. The shoulder area of the suspenders will be padded for comfort by fully encasing the webbing with aramid batting and wrap-around black 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

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

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 label.

_____Comply _____Exception

LABELS

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

Compliance to NFPA Standard #1971
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

SIZING BY VENDOR

Sizing samples shall be on hand for use when sizing. The vendor shall be available to perform all sizing requirements. 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

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.

COUNTRY OF ORIGIN

Jackets and Pants shall be manufactured in the United States.

Specifications for Structural Fire Fighting 13" Pull-On Boots
Globe FootGear ONYX™

NFPA 1971 and NFPA 1992 Compliant
Meets or exceeds NFPA 1971, *Standard on Protective Ensembles for Structural Firefighting and Proximity Firefighting, 2013 Edition* for Structural Fire Fighting and NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies, 2012 Edition.*

_____Comply _____Exception

General Design
13" Pull-On athletic footwear (cement construction) boots, black flame-resistant and water-resistant leather, double-stitched leather joining seams, webbing pull straps, padded leather flex joints in the shaft above vamp and heel, liquid and chemical resistant breathable bootie liner, composite safety toe cap, composite shank, composite penetration-resistant insole barrier, molded shin guard, flame-resistant synthetic rubber molded cup outsole and toe bumper, 3D lasting board, molded heel counter, internal heel fit system, and removable molded footbed.

_____Comply _____Exception

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

Test Method: SATRA TM144:2011
Slip Resistance of Footwear and Floorings
Load = 500 N
Dry Clay Quarry Tile: Forepart = 1.00
Heel = 0.90
Wet Clay Quarry Tile: Forepart = 0.60
Heel = 0.60
Frosted Ice: Forepart = 0.25
Heel = 0.20

For maximum slip resistance each outsole shall have Siping lines. Siping lines cut into flat areas open up when flexed to provide additional traction on water and ice. The boot shall also include self-cleaning lugs and an omni-direction tread pattern designed for superior performance in all terrains and when working on ladders.

_____Comply _____Exception

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

Test Method: SATRA TM194:2004
Longitudinal stiffness of footwear

_____Comply _____Exception

Leather
Boots shall be made from flame-resistant and water-resistant full-grain cattle hide leather with pebble-grain finish for durable tear and puncture resistance. Tumbled full-grain cattle hide leather shall be utilized in flex areas for mobility. The leather shall be chrome tanned to withstand high temperature with minimal shrinkage, re-tanned to impart water resistance and low water absorption, and finished to retain maximum breathability. Leather shall meet or exceed the following physical tests:

Water Penetration	ASTM D2099	15,000 flex minimum
Dynamic Water Absorption	ASTM D2099	15% maximum
Static Water Absorption	ASTM D6015	30% maximum
Slit Tearing Strength	ASTM D2212	30 pound minimum
Moisture Vapor Transmission	ASTM D5052	350 g/meter2/24 hours minimum
Flame Resistance	NFPA 1971	afterflame no more than 2.0 sec, not melt or drip, no burn through

_____Comply _____Exception

CROSSTECH® Footwear Fabric
A full-height, full sock, bootie liner made from a package of Omaha lining fabric, 300g felt insulation, and CROSSTECH® moisture barrier shall be provided for a waterproof and breathable moisture barrier as well as thermal protection as defined by the specified NFPA standards.

_____Comply _____Exception

Athletic Footwear (Cement) Construction Outsole
For optimum flexibility and comfort, boot shall include a VIBRAM® Synthetic Rubber Contoured Cup Outsole cemented to the bottom and sides of the upper using a 2-part cross-linking adhesive that forms a bond stronger than the materials it attaches. The outsole must be made from a flame, abrasion, oil, acid, and slip resistant compound engineered for high-traction, cold-weather resistance, and durability. Goodyear welt or direct attach construction methods shall not be acceptable.

_____Comply _____Exception

Composite Safety Toe Cap
The safety toe shall consist of a composite material that is lighter than steel, doesn't transmit heat or cold, and will spring back to shape after impact. Must exceed NFPA standards for safety. Metal toe caps shall not be acceptable.

_____Comply _____Exception

Composite Penetration Resistant Insole Barrier
Penetration resistance shall be provided by a composite insole to maximize flexibility and insulate from heat or cold transmission. Must exceed NFPA standards for safety. Metal plates shall not be acceptable.

_____Comply _____Exception

3D Composite Lasting Board
Boot uppers shall be lasted to a molded and contoured lasting board with a built-in flex zone in the forefoot and a torsionally stable heel. Flat fiber board lasting boards shall not be acceptable.

_____Comply _____Exception

Composite Shank
The shank shall consist of a composite material that is lighter than steel, doesn't transmit heat or cold, and springs back to shape better. Metal shank shall not be acceptable.

_____Comply _____Exception

Molded Heel Counter
Boots shall have a molded heel counter of water-resistant composite material individually molded to fit each size perfectly. Leather or fiber board heel counters shall not be acceptable.

_____Comply _____Exception

Padded Shin Guard
Boots shall include a padded polymer shin guard to provide extra protection when working on a ladder. Moisture absorbing natural fiber padding shall not be acceptable.

_____Comply _____Exception

Synthetic Rubber Toe Bumper
Boots shall have a molded Flame Resistant (FR) synthetic rubber toe bumper provide abrasion resistance when crawling. The toe bumper shall be cemented and 2-needle stitched to the vamp.

_____Comply _____Exception

Webbing Pull-Straps
Boots shall have NOMEX® webbing pull-straps securely attached to the uppers by inserting the straps at the top of the shaft between the leather shell and the lining, stitching securely to the leather with an open box and cross stitch, and then double needle stitching into the top seam to minimize stitching through the leather. Pull strength must be a minimum of 120 lbs when tested with a single handle.

_____Comply _____Exception

Internal Fit System
Boots shall have an anatomical foam insert that wraps around the top and sides of the heel with an opening to fit and hold the back of the heel securely while cushioning the ankle.

_____Comply _____Exception

3D Molded Footbed
Boots shall have a removable urethane foam footbed contoured to cradle and cushion the bottom of the foot and to provide arch support. The footbed shall have a moisture-wicking and anti-microbial fabric top layer.

_____Comply _____Exception

Sizes
Boots must be available in Men's 5 – 16 (full and half sizes), 17 – 18 (full sizes only) in Narrow, Medium, Wide, and X-Wide widths. Boots must be available in Women's 5 – 12 (full and half sizes) in Narrow, Medium, Wide, and X-Wide widths.

_____Comply _____Exception

Resoling Service
The winning vendor shall have resoling services available at their factory as needed.

_____Comply _____Exception

Country of Origin
Boots shall be manufactured in the United States.

_____Comply _____Exception

SHELBY SPECIALTY GLOVES

5280 & # 5280G

Specifications:

Outer Shell: Heavy Weight, Fire Retardant, Heat Resistant, 3.50 to 4.0 oz., Grain Elk hide on the glove back. Shelby Abrasion Resistant, Mulitirectional Fiber Structer, Brushed Pigskin on the palm.

Thermal Liner: 8 oz. S.E.F. Modacrylic Fleece Laminated to Gore RT7100 Glove Barrier Fabric.

Protective
Barrier: Gore (PTFE) RT7100 Glove Barrier Fabric. This barrier fabric is combined (laminated) to the thermal liner. The breathable barrier/ thermal liner system is individually graded and produced in as many sizes as glove sizes. The barrier/thermal liner systems are sized proportional to human hand sizes.

Wristlet: Nomex 10.5 oz per yard, Double ply, 4" Wristlet. Wristlet sewn to liner, and then sewn separately to the glove shell. Not required on #5280G.

Wrist Pull: 3" x 3 ½" Round Leather Pull, Sewn to Wristlet & Glove Body

Thread: Sewn with high burst Strength Kevlar (30/5) lock stitch, 8-10 stitches per inch

Hanger Loop: ¼" fire retardant, heat resistant split cowhide hanger loop.

Label: Label shall be Permanently Attached to each glove and certifies the glove meets or exceeds the requirements of the latest NFPA standards (1971, Standard on Protective Ensemble for Structural Fire Fighting, 2013 Edition). Label shall be durable and include the following information: name or designation of manufacture; model; name or style number; lot or serial number; size; date of certification tests; patent numbers; cleaning and care instructions. Label to be sewn to inside of glove.
Glove is constructed, tested and labeled in accordance with the NFPA Standard on Protective Ensemble for Structural Fire Fighting, NFPA 1971-2013 Edition. The glove is certified by the Safety Equipment Institute (SEI)

Origin: Made in U.S.A.

Sizes:
XXS , XS , S, M, L, XL, J

Design & Construction:
Glove shall be a gunn cut pattern with wing thumb and wrap around index finger. Lining is completely sewn S.E.F. Modacrylic, laminated to Gore RT7100 Glove Barrier Fabric. This creates a strong thermally stable, non-cracking/flaking one-piece liner/barrier system. All seams are sealed with a DuPont silicone sealant, which ensures that liquids do not come in contact with the hand or hand area. The one-piece lining is permanently sewn to the glove shell in the area of the fingertips and wrist. This proven attachment method eliminates the opportunity for lining pullouts & creates a uniform, inside lining even after repeated use in fire fighting conditions. The glove body shall extend 2" above the wrist crease & shall have a shirred elastic snuggler at the wrist.

Cairns

PURCHASING SPECIFICATION
STRUCTURAL FIREFIGHTERS HELMET

CAIRNS 1044, 1971-2007 REVISION

PURPOSE:
To supply a purchasing specification for a structural firefighter's helmet with a fiberglass composite shell

SCOPE:
The scope of this purchasing specification encompasses design, construction, materials and performance criteria deemed necessary for helmets utilized in structural firefighting.

GENERAL:
Helmets manufactured in accordance with this specification are designed to meet the requirements of NFPA 1971-2007 edition (NFPA 1971-2007 after Feb. 2007), standard for firefighter helmets.

NO EXCEPTIONS, DEVIATIONS OR DELETIONS TO THIS SPECIFICATION WILL BE ACCEPTED.

MANUFACTURER'S WARRANTY:
Helmets shall be warranted, for the lifetime of the helmet, to be free of defects in material and workmanship. The manufacturer shall guarantee, for a period of five (5) years from the date of manufacture that any helmet shell will be replaced free of charge if it is damaged beyond use while worn during normal assigned fire ground activities. The manufacturer shall be relieved of any replacement liability under this guarantee if there has been a failure to follow the manufacturer's maintenance requirements supplied with each helmet. Please refer to the official warranty policy #3600-09 for details.

HELMET SHELL:
The Cairns 1044 shall have a Traditional American Fire Service Style helmet shell, comprising a crown, with four (4) major ribs (front, back, left and right sides), and four minor ribs equidistant between each major rib, and a brim that has a short front visor continuing around the sides to a large rear brim area. The upper surface of the brim shall have the traditional fire service vine scroll-work molded into the surface of the composite.

The helmet shell material is a DuraGlas® composite consisting of a high-temperature-, flame-, and chip-resistant, "through-colored" thermoset resin, reinforced with 1" and 2" chopped fiberglass, which is compression molded to form a one piece shell.

The shell dimensions (with edge-trim) shall be 15.5" in length, 11.88" in width and a crown depth of 6.5". The shell shall have a nominal wall thickness of 0.065" in the crown and 0.080" in the brim.

The helmet shell shall be furnished with a formed brass front-piece holder which shall be attached to the shells front main rib, and positioned to support the top of a standard 6" fire department identification shield. The options of either a brass carved eagle, silk-screened brass eagle, a brass silk-screened maltese cross, or a brass carved beaver are available. The brass carved eagle and brass carved beaver shall incorporate a "crush zone" to absorb impacts.

The shell shall have a thermoplastic, front-piece mounting bracket affixed to the center of the front visor of the brim. The bracket shall provide for positioning and retention of a standard 6" fire department identification shield.

The shell shall have black, or white*, high-temperature, flame-resistant, flexible edge trim composed of an aluminum-cored, thermoplastic rubber (TPR). The edge-trim is secured around the entire brim of the helmet by crimping the aluminum core, and secured at the mating ends with a high temperature adhesive and clamped by the helmet hanger clip at the edge of the rear brim.

* *Available on white helmet shells only.*

The shell shall have a helmet hanger comprised of a 3/4", nickel plated "D" ring and a stainless steel clip. The helmet hanger shall be attached to the center rear of the brim.

IMPACT LINER:
The Cairns 1044 shall include an impact liner, which is comprised of rigid cell, high temperature urethane foam cap attached to a flame-resistant thermoplastic PPO inner liner. The impact liner shall be modular and field removable for periodic inspection of the foam's integrity. The impact liner is incorporated to provide increased thermal and impact protection.

HEAD SUSPENSION:
The Cairns 1044 shall consist of a 6-way head suspension system, attached to the impact cap. The head suspension system is comprised of three (3) fixed 0.75" wide nylon straps mounted at six points on the impact liner and fastened at their intersection to form the 6-way overhead strap assembly. The straps are attached to the impact cap by means of a tubular plastic ring, joined at the ends by an elastomeric tube that locks the straps into a routed annular groove in the impact cap.

SIZING ADJUSTMENT:
The size of the headband may be adjusted to fit the wearer's head by means of a ratchet adjustment system. The headband shall have a head size range of 6-3/8 to 8-3/8, adjustable in 1/8 increments. The head band is attached to the sides of the impact cap liner by four (4) flexible retention tabs. The rear ratchet arms shall have three (3) adjustable positions so that the angle of the ratchet may be set to accommodate the nape of the wearer's head.

COMFORT LINER:
The Cairns 1044 shall have a comfort liner, which consists of a headband cushion liner and a ratchet pad, which are both removable. Both components are produced from a foam core laminate system, which is comprised of a soft black flame resistant flannel material against the users head and backed by a soft loop material which will be secured to the headband and the ratchet with hook fastener. The comfort liner is machine washable, and can be easily upgraded to a leather-lined deluxe version.

CHINSTRAP:
The chinstrap shall be constructed of three (3) pieces (or sections) of 3/4" wide, spun-Nomex® webbing, which are connected on the left side of the helmet by a high-temperature, super-tough, thermoplastic quick release buckle, and by a cast zinc postman's slide buckle on the right hand side of the helmet.

The chinstrap is attached at either end of the impact cap by means of the tubular plastic ring, joined at the ends by an elastomeric tube that locks the chinstrap into a routed annular groove in the impact cap.
The long, middle-section, with the female half of the quick release buckle sewn to the left end, shall pass through the postman's slide buckle on the right, and include hook and loop fastener for stowage of extra strap. The middle section shall be a minimum of 23.0" in length and the total length of the chinstrap shall be 35.0" at full extension, end to end.

SHELL RELEASE PROVISIONS:
The impact liner, complete with suspension system and chinstrap assembly (retained as described above) shall be retained to the helmet shell by means of two (2) thermoplastic retention clips mounted under the faceshield pivot hardware, and by four (4) pieces of hook and pile fastener sections between the impact liner and helmet shell in the crown area. This design will enable the shell to be released from the helmet when impacted from below the brim, reducing the chance of being injured by the chinstrap, and leaves the impact cap on the wearer's head for continued thermal and impact protection.

EAR/NECK PROTECTION
The Cairns 1044 provides for ear and neck protection with a 6.5" wide, 19.0" long, full-cut earlap. The earlap consists of a 4.5 oz. / yd², yellow or black colored Nomex® outer-shell, and a flame resistant black flannel inner-liner. The earlap shall be secured to the impact liner by pieces of hook and pile fastener in no less than five (5) locations.

The earlap is machine washable and can be easily upgraded to a PBI/Kevlar earlap. The ear and neck protector shall be removable without interfering with the overhead strap assembly in any way and without removing any part of the helmets suspension.

EYE PROTECTION-OPTIONS:

DEFENDER VISOR:

The helmet shall have an integral visor system that retracts between the helmet shell and impact cap. The visor system shall be a wrap-around design, 4.5" high and 8.25" long. The lens shall be optically corrected to eliminate distortion. The lens of the visor system shall be available in clear or Tuffshield (yellow tinted) standard colors. Optional Tinted (Gray Smoked) and Mirrored finish lenses shall also be available. The lens shall be able to be quickly replaced without the use of tools.

FACESHIELD:

The faceshield shall be a wrap-around, high pivot design, 4.5" wide, 18.0" long and 0.150" thick. The lens material shall be high performance, high temperature resistant thermoplastic. The lens shall be coated with a scratch resistant coating on both inner and outer surfaces to protect the lens from abrasions.

FACESHIELD HARDWARE:

The faceshield shall be mounted to the helmet shell by means of two (2) glass-reinforced, high-temperature and flame-resistant thermoplastic bracket assemblies, with adjustable thermoplastic knobs one (1) on either side of the helmet shell. The brackets allow the faceshield to pivot above the helmet shell when it is not in use.

GOGGLE SYSTEM:

The goggle system shall be comprised of a high-temperature, flame- and impact-resistant goggle lens and frame, a flame-resistant, elastic goggle strap, and a goggle retention system. This retention system will lock the goggle onto the helmet at the back brim, which will prevent loss of the goggle when it is stowed or in the donned position. The goggle can also be attached to the helmet with side mounted hardware. This will allow the goggle to be stored in the front or back position of the helmet. The straps can be attached to the side hardware by means of lock down nuts through the straps or by a quick release fastener. Both inner and outer surfaces of the goggle lens will have an anti-scratch and anti-fog coating. Both ends of the lens will be reinforced with a fiberglass insulating label for extra durability at elevated temperatures. The lens will be low profile, optically correct with a nominal thickness of 1/16". The goggle strap will require a one time adjustment which facilitates donning while wearing gloves.

BOURKES:

The Bourke's are comprised of dual (2), 2.85 wide x 5.15" long x 0.115" thick, transparent polycarbonate lenses that pivot up and down at 90° simultaneously to provide eye protection when the shield is down, and are low-profile against the underside of the front brim when the lenses are flipped up. The inner edges of both lenses are designed to connect when the lenses are flipped down. The lenses are fastened to a single key and cable (spring) system that allows the two (2) lenses to move simultaneously. The entire assembly is mounted to a brass plate, which is fastened to the center of the front brim of the helmet shell.

RETRO-REFLECTIVE TRIM:

The helmet shall have eight tetrahedron shaped pieces of Lime-Yellow, retro-reflective, fluorescent Reflexite® trim around the exterior of the crown of the helmet shell for maximum daytime and nighttime visibility. Red-Orange & Lime-Yellow, retro-reflective, fluorescent Scotchlite® or Glo-flex® tetrahedrons must also be available.

PERFORMANCE CRITERIA:

The Cairns 1044 helmet shall meet the requirements of NFPA 1971-2007 edition, US-OSHA (CFR 1920) NBSIR 1977, and CAL-OSHA. The request of only a Bourke lens on this helmet reduces the certification to US OSHA (CFR 1920) NBSIR 1977.

PERFORMANCE VERIFICATION DATA REQUIREMENT:

Response to this specification shall include a current, NFPA 1971-2007 Certificate of Conformance test report from an accredited test facility for the helmet offered. This certification testing is conducted annually as per NFPA requirements.

OPTIONS:
A full array of products is available from flannel and leather liners, Nomex and PBI/Kevlar earlaps, custom visor and goggle options. Please see our catalog and contact a Cairns representative for a custom configuration.

MAINTENANCE, REPAIR and RETIREMENT:
Upon the customer's request, training will be provided explaining the proper maintenance, repair and retirement of the helmet.