



**EMS Clothing: RescueSafe™ EMS**  
Two-Piece Suit  
**Standards: NFPA 1999, 2003 Edition**  
**Revision: No. 1.1, 12 May 2006**



## **MATERIALS AVAILABLE**

Outer Shell: 6.0 oz. Nomex® IIIA

Moisture Barrier: Stedair® 123 Blood Borne Pathogen-Resistant Moisture Barrier

## **DESIGN FEATURES**

### **A. GENERAL**

1. All stitches are made of *Nomex thread*.
2. All seams and stitching are *8 to 10 stitches per inch*.
3. All *major A seams* are double-stitched felled seam with a lock or chain stitch.
4. All *stress points* have a 42-stitch bartack.
5. There are *no raw edges* in any of the garments.
6. *Labels* thermal sealed to the coat and pants indicate certifications to NFPA 1999, 2003 Edition standard and provide the following information: manufacturer's name, address, phone and fax numbers, and website address; garment model, style, and size; garment item, lot and tracking numbers; date (month and year) and place of manufacture; materials construction, relevant warnings, and cleaning instructions.
7. Coat and pants are each supplied with a *User's Information Guide* presented in a bi-lingual format. The Guide details pre-use information, hazards, performance, warranty, size/adjustment, garment conditions, inspection areas and frequency of inspections, donning and doffing, storage, retirement, decontamination, cleaning, and drying procedure. The Guide also includes areas for recording user identification and a grid for recording garment information as well as inspection, cleaning and service dates.

### **B. COAT**

1. **BODY.** The coat body is a three-piece design consisting of one back and two front panels made of outer shell material. Seams joining all panels are double-stitched. The hem of the coat is a 1<sup>1/2</sup>" wide (3.8 cm) double-ply layer of shell material secured by a top and bottom row of reinforced stitching. Sewn inside the channel in the hem is a heavy-duty elastic band that spans the back panel of the coat. The elastic band is secured to the hem with reinforced stitching at points approximately 3" (7.6 cm) forward of the side seams. The elasticized side and rear waistband, combined with a flat front waistband, provide a tailored but comfortable fit.
2. **SLEEVES AND CUFFS.** The sleeves are set-in style with a single panel designed to allow the user optimal freedom of movement while wearing clothing underneath. The single panel is double-stitched on the underside of the sleeve, from the armpit to the cuff and the sleeve is



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double-stitched to the coat body. Sleeve cuffs are reinforced with two-ply double-stitched shell material for increased durability. A closure tab sewn approximately  $\frac{1}{4}$ " (0.6 cm) from the cuff of each sleeve enables the user to adjust the sleeve opening. Each closure tab measures 3" x  $1\frac{1}{2}$ " (7.6 x 3.2 cm) and is comprised of two-ply shell material single-stitched together and double-stitched to the front side of the sleeve. A patch of Velcro® pile sewn on the underside of the horizontal closure tab mates with a 4" x 1" (10.2 x 2.5 cm) strip of Velcro hook that is sewn horizontally on the front side of the sleeve.

3. **ENHANCED ACTION BACK** The rear panel of the coat includes two inverted pleats, one on each side. The pleats are sewn in each shoulder seam at the outside extreme and extend vertically down the sides of the coat to the elasticized waistband. The pleats are sewn into the top stitch row in the waistband. Pleat expansion is widest at the shoulder area and tapers toward the waistband.
4. **COLLAR**. The collar is comprised of two layers of shell material joined and secured by a double-stitched top row. A layer of Stedair 123 is sandwiched in between for added moisture and blood-borne pathogen protection. The bottom edge of the collar is sewn to the coat body with a single row of stitches and reinforced on the extremes.

The top extremes of the closure system are secured at a point near the leading edges of the left and right collar. When the closure system is in the open position, the collar lies flat. When the closure system is in the closed position, the collar is upright, providing added protection to the user's neck and lower chin area.

A large hang-up hook made of double-thickness shell material is stitched into the seam joining the collar and back body panel. The two layers of shell material are single-stitched together. The approximate measure of the loop is  $\frac{3}{4}$ " x 8" around (1.9 x 20.3 cm).

5. **COAT LINER**. The coat liner is made of Stedair 123, a three-ply moisture barrier that protects against intrusion of blood borne pathogens and other potentially dangerous fluids. Liner construction parallels the outer shell's three-piece design, with one back and two front panels. Liner seams align with outer shell seams, and the outer perimeter of the liner is sewn into all hems of the coat body. Liner in the sleeves is sewn into the sleeve seam at the shoulder and into the cuff. All seams are taped and heat-sealed to completely prevent water penetration. The collar has a liner overlap that positively prevents water intrusion. Liner extends  $\frac{1}{4}$ " (0.6 cm) under the lower inside edge of the collar, where it is secured by the bottom-stitch row as well as taped and heat-sealed. Between the two layers of shell material of the collar is the upper portion of a panel of liner inserted to provide a continuous moisture barrier in the collar. This panel is attached to the back top edge of the collar and extends below the collar line approximately 7" (17.8 cm).



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6. **POCKETS.**

**Chest Pocket.** A 5<sup>1/2</sup>" x 5<sup>1/2</sup>" (14 x 14 cm) chest pocket made of shell material is single-stitched to the upper right area of the coat. The upper extremes of the pocket are bartacked to the coat for maximum resistance. The rectangular pocket flap is made of two single-stitched layers of shell material, and the flap is double-stitched to the coat body. A 1" (2.5 cm) gap in the top double-stitched row of the flap allows easy access to a pen. A 3" x 1" (7.6 x 2.5 cm) strip of Velcro hook is sewn horizontally to the underside of the flap; this strip mates with a corresponding Velcro pile patch sewn horizontally on the top edge of the pocket to secure the flap to the closed position.

**Pleated Cargo Pockets.** Two 7<sup>1/2</sup>" x 9" x 1<sup>1/2</sup>" (19.1 x 22.8 x 3.8 cm) bellows-style cargo pockets made of shell material are double-stitched to the front sides of the coat. The top edge of each pocket is also double-stitched, and upper and lower extremes are bartacked to the coat for maximum resistance. At the base of each pocket are two aluminum eyelets for liquid drainage. The pocket flap is constructed of two-ply shell material single-stitched together, and is double-stitched to the coat. Adjustable closure is provided by two 2<sup>1/2</sup>" x 1<sup>1/2</sup>" (6.3 x 3.8 cm) strips of Velcro hook sewn vertically on the underside of the flap with two corresponding Velcro pile patches sewn horizontally on the upper edge of the pocket.

An opening approximately 5" long (12.7 cm) centered along the outside edge of each cargo pocket provides access to an internal hand warmer pocket. The rear side of the hand warmer pocket is the coat shell, and the front side is a 6<sup>3/4</sup>" x 7<sup>1/2</sup>" (17.1 x 19.1 cm) panel made of shell material. The panel is stitched to the coat body, and acts as a back panel for the cargo pocket.

**Radio Pocket.** The box-style radio pocket measures 9" x 3" x 2" (22.9 x 7.6 x 5.1 cm) and is sized for universal use. The pocket is sewn to the upper front left side of the coat, and upper extremes of the pocket are bartacked for maximum resistance. The top edge of the pocket is double-stitched. One aluminum eyelet located on the bottom center of the pocket allows for water drainage. The pocket flap is constructed of two-ply shell material single-stitched together, and the flap is double-stitched to the coat. The pocket flap has two openings designed to accommodate either a left- or right-mounted radio antenna. Adjustable closure is provided by a 3/4" x 11/2" (8.3 x 3.8 cm) strip of Velcro hook sewn vertically on the underside of the flap with a corresponding Velcro pile patch sewn horizontally on the upper extreme of the pocket.

7. **ELBOW REINFORCEMENT.** Each elbow has a 8" x 5" (20.3 x 12.7 cm) quilted pad double-stitched to the outside of the elbow. The elbow pad consists of an outside layer made of shell material reinforced with an inside layer of Ara-fill for added comfort and durability.



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8. **MICROPHONE LOOP.** The microphone loop is constructed of two-ply shell material single-stitched together. The 3" (7.6 cm) loop is sewn to the coat body above the radio pocket, and bartacked to the body at the extremes.
9. **FRONT CLOSURE AND DOUBLE STORM FLAP.** The double front closure system is comprised of a heavy-duty 24" (61.0 cm) zipper as positive inner closure and a double storm flap with Velcro as outer closure. The extreme ends of the zipper are attached approximately 1" (2.5 cm) below the top edge of the collar and approximately 2<sup>1/4</sup>" (5.7 cm) above the coat hem. The double storm flap extends nearly the entire length of the coat, i.e., from just below the top edge of the collar to the bottom edge of the coat hem. The left side of the zipper is sewn into the leading edge of the left front panel. On the outer shell approximately 1/2" (1.3 cm) from the leading edge is sewn a two ply flap of shell material measuring 27" x 1<sup>7/8</sup>" (68.6 x 4.8 cm). The two layers are single-stitched together, and the flap is bartacked to the coat at the upper and lower extremes. The right side of the zipper is sewn into the juncture of an inner and outer storm flap. Zipper placement is approximately 1<sup>3/8</sup>" (3.5 cm) from the leading edge of the right front panel; this results in a 1<sup>3/8</sup>" wide (3.5 cm) inner storm flap made of shell material that extends nearly the entire length of the coat. The outer storm flap is a 27" x 1<sup>5/8</sup>" (68.6 x 4.1 cm) two-ply flap of coat liner material sewn to the outer shell along the zipper line. The two layers are single-stitched together, and the extremes of the outer flap are bartacked to the collar and coat hem.

A 27" x 1" (68.6 x 2.5 cm) strip of Velcro pile is single-stitched to the underside of the left storm flap. A corresponding strip of Velcro hook is sewn on the exterior side of the right outer storm flap. When the zipper is closed, the right inner storm flap lies flat under the zipper to provide interior protection; the Velcro pile strip on the left storm flap folds over to mate with the Velcro hook strip on the right storm flap for exterior protection.

10. **RETRO-REFLECTIVE TRIM.**

**Silver Trim Style:** A 1" wide (2.5 cm) 3M™ Scotchlite™ retro-reflective silver band is sewn on the chest pocket flap, radio pocket flap, across the back panel of the coat, and down the topside of the sleeves from seam to cuff.

**Lime-Yellow Silver Triple Trim Style:** A 2" wide (5.0 cm) retro-reflective lime-yellow silver band is sewn completely around the mid-section, on the bottom of the radio pocket, across the back panel of the coat, and around the biceps on each arm.



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### **C. PANTS**

1. **BODY.** The body of the pants is a four-piece design consisting of two panels (front and back) for each pant leg. This design provides comfort and mobility when climbing and crouching. The panels are made of outer shell material, and all seams are double-stitched.
2. **WAIST.** A double-layer band of shell material is sewn to the inside of the waist for resistance and durability. This band is double-stitched at the top edge of the waistband, and secured by a row of single stitches along the lower edge of the band. Into the resulting channel is sewn a strip of elastic at each hip for a more comfortable fit. Each elastic strip is approximately 5" long (12.7 cm) and is reinforced at the extremes. The outer side of the waistband also includes six belt loops bartacked at both extremes.
3. **PANT LINER.** The pant liner is made of Stedair 123. Liner construction parallels the pant body's four-piece design, with two back and two front panels. Liner seams align with outer shell seams, and the outer perimeter of the liner is sewn into the waistband and the hem of each pant leg. Seams are taped and heat sealed to completely prevent water penetration.
4. **FLYFLAP.** The flyflap consists of a layer of outer shell material sewn to the underside of the leading edge of the left front body panel beginning at the waist and extending downward to the crotch area. The resulting double layer of outer shell material is single stitched at the leading edge of the panel, and double-stitched at the outside edge with bartacking at the lower extreme and at the juncture with the inseam. The flyflap is approximately 1<sup>1/2</sup>" wide (3.8 cm) at the top, and tapers slightly at the crotch area. An internal flyflap panel constructed of two-ply shell material is double-stitched to the leading edge of the right front body panel.
5. **CLOSURE SYSTEM.** Front closure is provided by an open-end heavy-duty brass zipper. The left side of the zipper is sewn into the underside of the flyflap, and the right side of the zipper is sewn on the outside of the internal flyflap panel. A stainless-steel snap socket is riveted to the leading top edge of the flyflap and positioned to engage with its corresponding post on the right internal flyflap panel for secure flap closure.



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6. **POCKETS.**

**Rear Pockets.** Two  $7^{3/4}$ " x  $7^{1/4}$ " (19.7 x 18.4 cm) patch-style pockets made of shell material are double-stitched to the sides of the pants' upper back. The top edge of each pocket is also double stitched, and upper extremes are bartacked to the trousers for maximum resistance. Centered at the lower edge of each pocket is an aluminum eyelet for liquid drainage. The rectangular top flap on each pocket is made of double-layer shell material, and is double-stitched to the pants. A 4" x 1" (10.2 x 2.5 cm) strip of Velcro hook is sewn horizontally to the underside of each flap; these strips mate with corresponding horizontal Velcro pile patches on the top edge of the pockets to secure flaps to the closed position.

**Side pockets.** Two large slash pockets made of double-layer shell material are sewn to the sides of the pants. The two layers of shell material are single-stitched together. The upper edge of each pocket is sewn into the waistband at the top, and the bottom edge is sewn into the outer side seam at the bottom. The pockets are bartacked to the pants body at the lower extreme.

**Bellows cargo pockets.** Two 9" square x 2" ( $22.9 \text{ cm}^2$  x 5.1 cm) side-mounted bellows-style cargo pockets made of shell material are sewn to the body and centered across the outside seam. The top edges of the pockets are double-stitched, and the pockets are bartacked at the upper and lower extremes. Each pocket includes two aluminum eyelets at the bottom edges for liquid drainage. The rectangular top flap on each pocket is made of double-layer shell material single-stitched together, and the flap is double-stitched to the pants. Two  $2^{3/4}$ " x  $1^{1/2}$ " (7.0 x 3.8 cm) strips of Velcro hook are sewn vertically to the underside of each flap; these strips mate with corresponding horizontal Velcro pile patches on the top edge of the pockets to secure flaps in the closed position.

**Utility pockets.** On the outside of the right cargo pocket is a single-compartment utility pocket as well as a three-channel pocket with Velcro tabs. The  $6^{1/4}$ " x  $5^{1/2}$ " (15.9 x 14.0 cm) single-compartment pocket includes a rectangular flap, and both pocket and flap are sewn to the cargo pocket. The flap is single-stitched along the top and sides for protected closure. Sewn to the outside of the single-compartment utility pocket is the  $4^{3/4}$ " by  $5^{1/2}$ " (12.1 x 14.0 cm) channeled pocket. Three equally sized vertical channels provide easy access to EMS instruments. A closure tab made of two-ply shell material is double-stitched to the utility pocket above the far left and right channels. Each tab measures approximately 5" x  $1^{3/8}$ " (12.7 x 3.5 cm) and has on its underside a vertical strip of Velcro hook. This strip mates with a corresponding patch of Velcro pile on the front of the channel for closure. The Velcro tabs also can be used to configure utility loops for attachment of EMS instruments.



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7. **KNEE REINFORCEMENT.** Each pant leg has a 13<sup>3/4"</sup> x 8<sup>1/4"</sup> (34.9 x 21.0 cm) quilted pad double-stitched to the outside of the knee. The knee pad consists of an outside layer made of shell material reinforced with an inside layer of Ara-fill for added comfort and durability.
8. **PANT CUFF REINFORCEMENT AND ADJUSTMENT.** Pant cuffs are reinforced with a double-ply shell material and are double-stitched for greater durability. Adjustable 3<sup>1/4"</sup> x 1<sup>5/8"</sup> (8.3 x 4.1 cm) Velcro closure tabs at the bottom of the cuff allow cuff adjustment and a tight seal around boots. The closure tabs are made of single-stitched double-ply shell material and are sewn into the inside seam. Velcro pile on the underside of the tab mates to a 7<sup>1/8"</sup> x 1<sup>1/2"</sup> (18.1 x 3.8 cm) Velcro hook strip single-stitched horizontally on the leg's lower rear panel.

**Zipper closure.** A heavy-duty vertical zipper at the cuff allows for easy access to boots and facilitates stepping in and out of the pants. The zipper measures approximately 10" (24.5 cm) and is sewn into the outside seam of each pant leg. Behind the zipper is a wedge-shaped, bellowed panel made of shell material that, with the pants liner, provides a two-ply barrier from moisture when the zipper is both open and closed.

9. **RETRO-REFLECTIVE TRIM.**

Silver Trim Style: A 1" wide (2.5 cm) 3M™ Scotchlite™ retro-reflective silver band is sewn on rear pocket flaps, cargo pocket flaps and around each leg between the cuff and knee pad.

Lime-Yellow Silver Trim Style: A 2"-wide (5.0 cm) retro-reflective silver band is sewn on rear pocket flaps, cargo pocket flaps and around each leg between the cuff and knee pad.

**NOTE:** Measurements cited are based on a coat and pants sized Large. These measurements may vary slightly for coats and pants in alternate sizes. Measurements as expressed are length x width (x depth).

**TRADEMARKS:**

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