INVITATION FOR BID

UNIFORMS
Winston-Salem Police Department

Bids Will Be Opened
10:00 a.m., Tuesday, September 10, 2019

SUITE 324, CITY HALL BUILDING
101 NORTH MAIN STREET
WINSTON-SALEM, NORTH CAROLINA

ADVERTISEMENT FOR BIDS
WSPD UNIFORMS

Pursuant to Section 143-129 of the General Statutes of North Carolina, sealed proposals endorsed WSPD Uniforms to be furnished to the City of Winston-Salem will be received by the City/County Purchasing Department in Suite 324, City Hall Building, 101 North Main Street, Winston-Salem, NC until 10:00 a.m., September 10, 2019 at which time they will be publicly opened and read.

Instructions for submitting bids and complete specifications may be obtained during regular office hours, Monday – Friday, 8:00 a.m. to 5:00 p.m. at the same location, or by contacting TaWanna A. Gates via email tawannag@cityofws.org or phone 336-747-6938.

The City reserves the right to reject any or all proposals.

TaWanna A. Gates
Senior Buyer
Notice to Bidders

It is the policy of the City of Winston-Salem that an employee, officer, or agent of the City may not participate in any manner in the bidding, awarding, or administering of contracts in which they, or a member of their immediate family, their business partner, or any organization in which they serve as an officer, director, trustee, or employee, have a financial interest.

The successful bidder must comply with all provisions of the Americans with Disabilities Act (ADA) and all rules and regulations promulgated thereunder. By submitting a bid, the successful bidder agrees to indemnify the City from and against all claims, suits, damages, costs, losses, and expenses in any manner arising out of, or connected with, the failure of the Company, its subcontractors, agents, successors, assigns, officers, or employees to comply with the provisions of the ADA or the rules and regulations promulgated thereunder.

All bids must be firm and not subject to increase, unless specified within the provisions of this Invitation for Bid (IFB) and mutually agreed upon by the City and the proposer.

No special inducements will be considered that are not a part of the original bidding document.

City Rights and Options
The City, at its sole discretion, reserves the following rights:

- To supplement, amend, substitute or otherwise modify this IFB at any time
- To cancel this IFB with or without the substitution of another IFB
- To take any action affecting this IFB, this IFB process, or the equipment subject to this IFB that would be in the best interests of the City
- To issue additional requests for information

Public Records
Any material submitted in response to this IFB will become a “public record” once the bidder’s document(s) is opened and the bidder is determined to be a participant in the solicitation process and shall be subject to public disclosure consistent with Chapter 132, North Carolina Statutes. Bidders must claim any applicable exemptions to disclosure provided by law in their response to this IFB. Bidders must identify materials to be protected, and must state the reasons why such exclusion from public disclosure is necessary and legal. The City reserves the right to make all final determination(s) of the applicability of North Carolina General Statutes § 132-1.2, Confidential Information.

Familiarity with Laws and Ordinances
The submission of a bid on the equipment requested herein shall be considered as a representation that the bidder is familiar with all federal, state, and local laws, ordinances, rules and regulations which affect those engaged or employed in the provision of such services, or equipment used in the provision of such services, or which in any way affects the conduct of the provision of such services; and no plea of misunderstanding will be considered on account of ignorance thereof. If the bidder discovers any provisions in the IFB documents that are contrary to or inconsistent with any law, ordinance, or regulation, it shall be reported to the City in writing without delay.

The bidder agrees that in carrying out this contract, compliance will be maintained with all applicable federal, state, and local laws, specifically including, without limitations, the Occupational Safety and Health Act of 1970 and Section 1324A, the Immigration Reform and Control Act.

The bidder certifies that the bid is made in good faith and without collusion with any person bidding on this contract or with any officer or employee of the City of Winston-Salem.

The undersigned further agrees, in connection with the performance of this contract, not to discriminate against any employee or applicant for employment because of race, religion, color, gender, age, handicap, political affiliation or national origin.
Ethics Policy / Code of Conduct

The City of Winston-Salem has establish guidelines for ethical standards of conduct for City representatives and to provide guidance in determining what conduct is appropriate in particular cases. City representatives should maintain high standards of personal integrity, truthfulness, honesty, and fairness in carrying out public duties; avoid any improprieties in their roles as public servants including the appearance of impropriety; and never use their position or power for improper personal gain. In establishing an ethics policy, the City of Winston-Salem desires to protect the public against decisions that are affected by undue influence, conflicts of interest, or any other violation of these policies as well as promote and strengthen the confidence of the public in their governing body. For a complete review of the City Policy click the following link.
http://www.cityofws.org/Home/Departments/Purchasing/Articles/Bids

Equal Employment Opportunity / ADA

The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, religion, national origin, political affiliation, gender, age or disability. The contractor shall comply with all applicable laws and regulations regarding the American with Disabilities Act (www.ADA.gov) as amended from time to time and all rules and regulations promulgated thereunder and other laws and regulations pertaining to equal employment. The Contractor hereby agrees to indemnify the Owner from and against all claims, suits, damages, costs, losses and expenses in any manner arising out of or connected with the failure of the contractor, its subcontractors, agents, successors, assigns, officers or employees to comply with the provisions of the ADA or rules and regulations promulgated thereunder. The Contractor agrees to act affirmatively in its employment and promotion practices, and in the general treatment of its employees.

Stimulation of the Local Economy

In an effort to stimulate the local economy, foster development and promote efficiency in the provision of city services and the completion of various city projects, the City of Winston-Salem has undertaken an initiative to strongly encourage all parties contracting with the City of Winston-Salem to evaluate their internal operations and hiring practices and, where appropriate, to initiate efforts to stimulate the local economy by hiring applicants and contractors from the Winston-Salem/Forsyth County Area and by utilizing minority and women contractors and service providers. Such efforts to stimulate the local economy may be accomplished by posting job vacancies with the North Carolina Employment Security Commission, the Piedmont Triad Regional Council of Governments, and the Winston-Salem Urban League; and utilizing the State of North Carolina Office for Historically Underutilized Business database (https://www.ips.state.nc.us/IPS/vendor/SearchVendor.aspxt=hobtain) or other local resources such as the City of Winston-Salem M/WBE Program to identify Winston-Salem/Forsyth County based contractors and subcontractors. Stimulation of the local economy requires a collaborative effort of both the public and private sector. The city is committed to taking reasonable steps to achieve said goal.
Iran Divestment Act
Contractor hereby certifies that it is not on the North Carolina State Treasurer’s list of persons engaging in business activities in Iran, prepared pursuant to NCGS § G.S. 147-86.58, nor will Contractor utilize on this agreement any subcontractor on such list. This list, along with additional information about the Iran Divestment Act, is available on the Treasurer’s Office site: https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx.

Divestment from Companies that Boycott Israel
Contractor hereby certifies that it is not on the North Carolina State Treasurer’s list of companies engaged in a boycott of Israel in violation of NCGS 147-86.80 et. seq. and that it will not utilize on this agreement any subcontractor on said list.”

SPECIAL TERMS AND CONDITIONS

DETAILED SPECIFICATIONS: Detailed specifications for the uniforms are included with the bid request. Bids to be submitted in accordance with the specifications and these Special Terms and Conditions, both of which require doing all that is necessary, proper, or incidental to the furnishing of the uniforms identified herein. All things not expressly stated in the specifications or Special Terms and Conditions but involved in carrying them out must be included in bidder’s proposal as though they were specifically stated.

NOTICE TO BIDDERS: All bids are subject to the provisions of the instructions to Bidders, special terms and conditions specific to this Invitation for Bids, the specifications, and General Contract Terms and Conditions. The City of Winston-Salem objects to and will not evaluate or consider any additional terms and conditions submitted with a bidder response. This applies to any response appearing in or attached to the document as part of the bidder’s response. **DO NOT ATTACH ANY ADDITIONAL TERMS AND CONDITIONS.** By execution and delivery of a proposal, the bidder agrees that any additional terms and conditions, whether submitted purposely or inadvertently, shall have no force or effect. It shall be the bidder’s responsibility to read this entire document, review all enclosures and attachments, and comply with all requirements specified herein. The bidder is cautioned that the requirements of this bid can be altered only by written addendum and that verbal communications from whatever source are of no effect.

EXCEPTIONS TO SPECIFICATIONS:

In the event that clarifications or changes to bid specifications are necessary, changes will be made by written addendum. In all cases equipment must be furnished as requested, and where brand names are used, consider the term "or equal" to follow. Such references are not intended to be restrictive and comparable products of other manufacturers will be considered. However, **written approval for any proposed substitution or change in specifications must be obtained by bidder prior to the close of bids.** Any request for an approved equal, change in specification or protest of specifications must be fully supported with technical data, test results, or other pertinent information and evidence that the substitute offered is equal to, or better than, the specification requirement. The bidder shall not construe this paragraph as inviting deviation or implying that any deviation will be acceptable.

Bidder’s failure to request exceptions to specifications or approved equals as stated above will be interpreted as the bidders’ intent to comply fully with the requirements as written. Conditional or qualified bids shall be subject to rejection in whole or in part.

The City of Winston-Salem reserves the right to postpone bid openings for its own convenience.
GENERAL REQUIREMENTS: The uniforms furnished shall be new and unused and the manufacturer's latest listed and published stock model, or models which meet all the applicable requirements of these specifications.

BIDDERS SUBMITTALS (Does not apply): Bidder must furnish all information requested herein including descriptive literature and/or complete specifications covering the products offered. Reference to literature submitted with a previous bid will not satisfy this provision. Bids which do not comply with these requirements will be subject to rejection. All documents submitted should bear the name of the bidder.

EXPENSES INCURRED IN PREPARING BID: The City of Winston-Salem accepts no responsibility for any expense incurred by the bidder in the preparation and presentation of a bid. Such expenses shall be borne exclusively by the bidder.

CONTRACT/AWARD: Pursuant to the laws governing public contracts in North Carolina, the successful bidder’s/vendor’s response to this Invitation for Bids and Proposals and any addenda thereto, plus the City’s issuance of a City of Winston-Salem Purchase Order for the proposed goods and/or services shall constitute a binding contract.

PURCHASE OF ADDITIONAL REQUIREMENTS: Subject to the successful bidder’s acceptance, the City reserves the option to purchase additional equipment as specified herein at the price bid and awarded in this Invitation for Bids and Proposals within one (1) year from bid opening date. This bid may also be utilized by other entities per N.C.G.S. to piggyback at the sole discretion of the vendor.

INDEMNIFICATION: The bidder/vendor covenants to save, defend, keep harmless, and indemnify the City of Winston-Salem and all of its officers, departments, agencies, agents, and employees from and against all claims, loss, damage, injury, fines, penalties and cost - including court costs and attorney’s fees, charges, liability, and exposure, however, caused resulting from, arising out of, or in any way connected with the bidder’s/vendor’s negligent performance or nonperformance of the terms of the contract.

VENDOR SUPPORT/SERVICE AND PARTS (where it applies): The vendor and/or manufacturer bidding on these specifications must have the ability to provide repair parts and technical service in the form of a service representative, including the maximum time from receipt of notice to arrival of parts or the service representative. The manufacturer, whether they are the vendor or not must be satisfactory to the City of Winston-Salem from the standpoint of experience, reliability, and demonstrated ability to manufacture equipment comparable as to size and type as that required by the specifications, and shall have manufactured and/or sold equipment of the size and type specified which has operated satisfactorily in the field for a minimum of one year. The City of Winston-Salem reserves the right to reject bids from vendors that have failed to perform satisfactorily under previous contracts with the City of Winston-Salem and/or vendors that cannot produce satisfactory evidence that they can furnish promptly all spare parts needed for ordinary service and repair of the equipment herein specified.
INSPECTION, TRAINING, PERFORMANCE TEST AND ACCEPTANCE:

a. Upon delivery the uniforms will be subject to inspection to verify conformance with specifications by the staff of the City of Winston-Salem

b. Any defects of uniforms to comply with any requirements of the City specifications must be immediately remedied by the vendor at the vendor's own expense prior to acceptance by the City.

WARRANTY (Does not apply): Bidder to include the warranty provisions as outlined in bid specifications.

TAX EXEMPTIONS: The City of Winston-Salem is exempt from Federal Excise Tax but not from State and Local Sales Tax. Sales tax should not be included in bid prices, but may be added as separate items.

EVALUATION AND SELECTION OF BIDS: The evaluation of vendor bids shall center on the match between the stated specifications and other requirements included in the final bid request and the vendor's proposal including selection of the lowest responsible bidder, with consideration of past performance, service record, and reliability. The statutory provisions controlling purchasing by local governments in N. C. (GS 143) includes selection standards for use in making of awards. The provision reads, “All contracts shall be awarded to the lowest responsible, responsive bidder, taking into consideration quality, performance, and the time specified in the bids for the performance of the contract”. The City of Winston-Salem reserves the right to accept or reject any or all bids and proposals and further specifically reserves the right to make the award or awards in the best interest of the City of Winston-Salem.

All bids shall be made firm for no less than sixty (60) days.
Proposal Form
WSPD UNIFORMS

Submit proposals to the following location:

US Postal Service address:  
City/County Purchasing Department  
Post Office Box 2511  
Winston-Salem, North Carolina 27102  
or  
Hand-delivery or FedEx address:  
City/County Purchasing Department  
101 N. Main Street, 324 City Hall  
Winston-Salem, North Carolina 27101

The City of Winston-Salem and Forsyth County Purchasing Department is seeking bids for uniforms for the Winston-Salem Police Department per detailed specifications included in this document.

For any questions or comments regarding this bid please contact Trace Wooten 336-773-7949 trwooten@wspd.org  or TaWanna A. Gates 336-747-6938 tawannag@cityofws.org

The undersigned bidder hereby declares that they have carefully examined the specifications contained herein and will provide all labor, materials, equipment, supervision, and insurance applicable to perform the service in accordance with the specifications and the requirements under the following sum to wit:

The quantities listed are not approximate; the city reserves the right to order more or less than what is specified. Please bid accordingly. Please do not substitute brand name and number specified.

The above prices shall be quoted firm from October 2019 thru September 30, 2020, with the option to extend the contract for as many as two additional twelve month periods beginning in October of each year, subject to the vendor’s acceptance and funds are available for that purpose. At the beginning of each twelve-month extension, prices may be adjusted based on the most recent Producer Price Index (PPI).
<table>
<thead>
<tr>
<th>Item</th>
<th>Item Name</th>
<th>Quantity</th>
<th>Description</th>
<th>Size Range</th>
<th>Standard Price</th>
<th>Special Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female Short Sleeve Police Uniform Shirt - SPIEWAK SPDU61Z</td>
<td>400</td>
<td>No Substitutions</td>
<td>30-44</td>
<td>$_____________</td>
<td>$_____________</td>
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<td></td>
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<td>46 &amp; Up</td>
<td>$_____________</td>
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</tr>
<tr>
<td>2</td>
<td>Female Long Sleeve Police Uniform Shirt – SPIEWAK SPDU66Z</td>
<td>400</td>
<td>No Substitutions</td>
<td>30-44</td>
<td>$_____________</td>
<td>$_____________</td>
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<td></td>
<td></td>
<td>46 &amp; Up</td>
<td>$_____________</td>
<td>$_____________</td>
</tr>
<tr>
<td>3</td>
<td>Male Short Sleeve Police Uniform Shirt – SPIEWAK SPDU60Z</td>
<td>400</td>
<td>No Substitutions</td>
<td>14.5-18.5</td>
<td>$_____________</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>19 &amp; Up</td>
<td>$_____________</td>
<td>$_____________</td>
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<tr>
<td>4</td>
<td>Male Long Sleeve Police Uniform Shirt – SPIEWAK SPDU65Z</td>
<td>400</td>
<td>No Substitutions</td>
<td>14.5 – 18.5</td>
<td>$_____________</td>
<td>$_____________</td>
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<td></td>
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<td></td>
<td></td>
<td>19 &amp; Up</td>
<td>$_____________</td>
<td>$_____________</td>
</tr>
</tbody>
</table>
Item 5
400  Female Police 4 Pocket Uniform Pant – SPIEWAK SPDU68 – No Substitutions

Sizes 4-24 Standard  EACH $______________________

Size 26 & Up $_________________ Special $____________________

Total for 400

_____________________________________________________

Item 6
400  Female Police 6 Pocket Uniform Pant – SPIEWAK SPUD67 – No Substitutions

Sizes 4-24 Standard  EACH $______________________

Size 26 & Up $_________________ Special $____________________

Total for 400

_____________________________________________________

Item 7
400  Male Police 4 Pocket Uniform Trouser – SPIEWAK SPDU68 – No Substitutions

Sizes 28-46 Standard EACH $______________________

Size 48 & Up $_________________ Special $____________________

Total for 400

_____________________________________________________

Item 8
400  Male Police 6 Pocket Uniform Trouser – SPIEWAK SPDU67 – No Substitutions

Sizes 28-46 Standard EACH $______________________

Size 48 & Up $_________________ Special $____________________

Total for 400

_____________________________________________________


Item 9
400 High Visibility Public Safety Vest – SPIEWAK STYLE#S912P – No Substitutions

Size Medium (XS-Medium) EACH $__________________
Size 2Xlarge (Large-2XL) EACH $_______________
Size 4Xlarge (3XL-4XL) EACH $_______________
Size 6Xlarge (5XL-6XL) EACH $_______________

Total for 400

___________________________________________

Item 10
400 Full Length Reversible Raincoat –SPIEWAK # S309V – No Substitutions

3” POLICE. Graphics should be printed on the back of the HV side of the jacket.

Size Regular (S-6XL) EACH $_______________

Total for 400

___________________________________________

Item 11
400 Public Safety Deluxe Performance Soft Shell Jacket/Liner – SPIEWAK Style#S318ZX
No Substitutions

Size Regular (S-5XL) EACH $_______________
Size Long (M-5XL) EACH $_______________

Total for 400

___________________________________________

Item 12
400 WeatherTech Systems Airflow Duty Jacket – SPIEWAK #SH3466-No Substitutions

Size Regular (S-5XL) EACH $_______________
Size Long (M-5XL) EACH  $_______________

Total for 400

___________________________________________

GRAND TOTAL FOR ALL ITEMS $_________________________
Proposals must be submitted in a sealed envelope containing **one original** bid showing original signatures and seals.

The undersigned bidder hereby declares that they have carefully examined the specifications contained herein and will provide all labor, materials, equipment, supervision, and insurance applicable to perform the service in accordance with the specifications and the requirements under the following sum to wit:

**TERMS AND CONDITIONS**: The undersigned guarantees all parts against defects and agrees to replace and to install at his own expense any part or parts of the apparatus damaged by reason of defective material, design, or imperfect workmanship during manufacturer's standard warranty period.

**BID AUTHORIZATION AND SIGNATURE**

Bids are to be signed by an officer of the company authorized to bind the submitter to its provisions. Failure to manually sign and notarize this bid form will disqualify the bidder and the bid will not be considered.

______________________________                _____________________________
Company                                      Telephone Number

______________________________
Authorized Signature

______________________________
Typed Name and Title

______________________________                _____________________________
Address, (P.O. Box or Street) City, State, Zip    E-Mail Address
On this ___ day of ____________, 20____ before me _________________________

(name)
to me personally known, being duly sworn, did execute the foregoing proposal, and did so state that

he/she was properly authorized by ________________________________

(Company name) SEAL

to execute the proposal and did so on his/her free act and deed.

Notary Public__________________________ My commission expires ______________
The following information is requested for statistical purposes only. Provisions or omission of this information will NOT affect the award of this contract.

Bidder certifies that:

A)  [ ] Yes, we are a woman-owned business
    [ ] No, we are not a woman-owned business

B)  [ ] Yes, we are a minority-owned business
    [ ] No, we are not a minority-owned business

If yes, please identify in appropriate box below:

[ ] Black
[ ] Hispanic
[ ] Native American Indian
[ ] Asian American, including Indian Subcontinent/Pacific Islands
[ ] Socially and Economically Disadvantaged
[ ] Disabled
NO BID / PROPOSAL INFORMATION FORM

Bid No: ____________________________
Bid Description: ____________________________

If your firm elects not to submit a proposal, please complete and email this form to:

Name: ____________________________
Title: ____________________________
Email: ____________________________

Please check all that apply:
- Cannot provide the product(s) or services required
- Cannot be competitive
- Cannot meet specifications described in attached bid
- Cannot provide insurance required
- Cannot provide bonding required
- Cannot comply with indemnification requirements
- Job too large
- Job too small
- Do not wish to do business with the City of Winston-Salem
- Company's current workload does not allow for additional work
- Other Reason:

Company Name: ____________________________
Agent Name: ____________________________
Office Phone: ____________________________
Email: ____________________________
FULL LENGTH REVERSIBLE RAINCOAT

Spiewak # S309V – NO SUBSTITUTIONS

Color: Black/ Yellow (062)

Design: The Raincoat shall be full-length, single layer, reversible, and waterproof. The raincoat shall have a triple fly front with a snap closure and side access pockets. Double needle construction shall be used throughout and all seams shall be taped to prevent leakage. All measurements mentioned in the construction specifications are based on stock size Large/Regular.

Shell Fabric: The shell fabric shall be single layer, 100% Nylon 200D Oxford, with a permanent polyurethane pigment coating. The shell fabric shall have a durable, water repellent finish with a minimum spray rating of 90. The reverse hi-visibility pigment coating side shall meet the requirements for certification to ANSI 107-2004 and EN 471 standards.

Body Detail: The front of the garment shall have two large welt access pass throughs measuring approximately 11” long to allow for access to equipment and/or weapon. There shall be a badge tab located on the wearer’s left chest on the black oxford shell side and on the wearer’s left chest on the hi-viz yellow side. The badge tab shall be made of self-fabric with two, matte black oxidized ligne-14 metal eyelets located 1 ¼” apart center-to-center for badge attachment when wearing garment either side out.

On the wearer’s right hand side there shall be a 2 ¼” wide center front placket of black shell material. The placket facing shall attach with ligne 22 metal oxidized snaps to approximately a 3” inside fly and approximately a 3” outside fly to insure water tight integrity. There shall be 6 snaps on each side of the facings. The coat shall measure approximately 48” long (size Large/Regular) from the neckline to the bottom of the coat.

There shall be a 5/8” turn up around the entire bottom sweep of the raincoat. There shall be a black collar formed by two pieces of shell material approximately 4” wide at center back with 4” collar points.

Pockets: The access side openings shall be finished with an 11” by 1 ¾” two-ply welt of self-material.

Reflective Tape: There shall be 2-inch wide 3M 3710 Scotchlite retro-reflective tape laminated to the hi-viz yellow side of the garment for visibility and safety of the wearer. The retro-reflective tape performance and configuration shall meet and exceed the EN-471 and ANSI 107-2004 Class 3 minimum requirements.

Sleeves: The sleeves shall be raglan one-piece, raglan, sewn double needle and finished with a 3/8’ elasticized sleeve cuff. All sleeve seams shall be sealed on the fluorescent yellow side with hot air sealing tape to prevent water leakage.

Hood: There shall be a 3 piece, reversible hood that snaps onto the collar. The hood shall have a 39” tunneled draw cord made of multi strand braided, nylon covered, 1/8” wide, black in color and sewn into a channel at the perimeter of the hood with adjustment secured by a push to release barrel lock. The tension loaded barrel lock shall measure approximately 1” long x 3/8” wide x ¼” deep and shall be black in color.

Snaps: The snaps on the garment shall be ligne 22 matte black metal snaps with a plastic washer backing for reinforcement.
Size Tag and Care Instructions:
Each jacket shall have a sewn-in woven size label, content label, care instructions, and ANSI pictogram showing garment is Class 3 and attached to the inside wind fly.

Sizes:
Regular: S – 6XL

Embellishments:
On the hi-visibility side, there must be black screen
Public Safety Deluxe Performance Soft-Shell Jacket/Liner
Spiewak Style# S318ZX-- NO SUBSTITUTIONS

DESIGN:
The garment shall be full cut, waist length intermediate soft-shell jacket with performance features designed for public safety use. The garment shall have a full zip front to the top of the collar, side vent zippers, adjustable sleeves, wind-toggle system, two front waist draw cords, a back elastic gripper, two front vertical zippered chest pockets, two forearm RFID pockets, and two zippered hand warmer pockets with mobile phone pocket inserts. All dimensions and lengths are based on men's size large. Dimensions and lengths for all other sizes must be graded appropriately.

The S318ZX must be compatible to be able to zip into any of the existing Weathertech® waterproof shell jackets.

FABRIC
The fabric shall be a 3-layer soft-shell whose content is 80% polyester 20% polyurethane and whose construction is 270T/75D and weight of 315gsm. The three layers are as follows: outer face made of 100% polyester mechanical high-elastic PPT fiber, inner face made of 100% polyester 100D/144F 165-175gsm non-pill fleece, and a waterproof/breathable hydrophilic polyurethane membrane bonded in-between.

BODY DETAIL
The front zipper shall be a 26-inch YKK #5 Vislon molded zipper. There shall be an inside storm placket with a stretch bound edge and rounded at outer corners of the top and bottom ends. The hand-warmer pockets shall have a 7" long #5 nylon coil reversed teeth zipper. The hand warmer pockets shall be lined with 100% polyester soft tricot and shall each have a separate compartment on the bottom interior that can be used for a mobile device. The vertical chest pockets shall have an 8 ½" #3 YKK zipper front closure and the pocket bag shall be angled to prevent inserted items from falling out. The chest pocket bags shall have two interior cord loops for phone/device wires. There shall be a 7” x 5” forearm pocket on each sleeve with a #3 YKK zippered opening. Shoulders feature mic-tabs / epaulets permanently affixed and made from same shell fabric, placed atop a stitched triangular panel wider at the shoulder (5”) and narrower at the neck seam (2¼”). The epaulets shall be 1 3/8” wide. The epaulet shall be sewn down at the armhole seam, the neck seam and the horizontal edges except for a 2 1/8” opening to accept a mic device. The opening shall be bartacked at both ends. The body of the jacket shall be tapered to allow the garment to be tucked. The sleeves shall be constructed with a separate stitched panel below the elbow. The inside of the sleeves shall be fully lined with 100% polyester smooth soft Tricot mesh, for wearer comfort, and ease of use. The gusseted cuff shall be gathered and sewn with elastic and a closure tab using power hook and loop. There shall be a loop made of shell fabric at the lower cuff sewn into the gusset seam to allow for sleeve attachment into any of the compatible Weathertech® systems shell jackets. There shall be side panels constructed under each armhole and #5 10" nylon coil side vent zippers at the bottom that shall allow access to equipment or duty belt. There shall
be a 7” zippered side pocket, which aligns with the front seam of the side panel on each side of the garment. There shall be a snap tab approximately 7/8” wide by 2” long at the bottom of the side vent zipper equipped with the female snap head at the end of the tab designed to snap to the male side of the snap which shall be placed on the front bottom sweep of the jacket.

There shall be a tunneled draw cord at the bottom sweep on the front of the jacket. The tunnel shall be created by folding the hem of the shell fabric at the base of the garment. The draw cord shall be elasticized and the ends of the draw cord shall be sewn down inside the tunnel at the front placket vertical seam and the side seam of the front panel and shall exit the tunnel at either side of the garment through two finished eyelet holes. At the exits the draw cord shall have a bead and barrel lock to allow the cord to be tightened. There shall be a snap tab on each front panel side seam on the inside of the garment 1½” up from the bottom to secure the elasticized shock cord when tightened. The snaps on the tabs shall be compression 24L black oxidized snaps with matte finish caps. The back bottom inside band of the garment shall have a 1” wide elasticized gripper.

COLOR
NAVY (011)

EMBLEM
Each garment shall have an Agency emblem attached to each shoulder centered ½” below the shoulder seam. Emblems will be provided by the Agency.

CARE
Garment to be fully machine washable, cold water. Do not bleach. Tumble dry low heat, gentle cycle. Do not use fabric softener. Do not iron. Do not commercially launder and do not dry clean.

SIZES
Regular  S - 5XL Long: M - 5XL
HIGH VISIBILITY PUBLIC SAFETY VEST
ANSI/ISEA 207-2006 COMPLIANT

Spiewak Style# S912P-- NO SUBSTITUTIONS

SPECIFICATION
The following specification outlines the garment requirements for High Visibility Personal Protective Equipment designed for enhanced visibility while working in or adjacent to the roadway for Public Safety Personnel and First Responders. The performance and design criteria of this garment are established to provide wearer conspicuity and enhance high-visibility over a wide range of lighting and environmental conditions in the work setting such as twilight, overcast, rain, snow, daylight, and night.

HVG CONSTRUCTION
The HVG shall be home launderable.
All materials shall be durable.
The garment must fit comfortably on wearer and thus promote continuing use.

HVG BASE MATERIAL
Base fabric shall be 100% lime-yellow polyester knit mesh with a density to meet ANSI 207-2006 specifications as a fluorescent background material.
The minimum fluorescence is 4.0.
Shrinkage shall be less than 3% warp, 3% fill.
Piling shall meet a random tumble level minimum 4.5.
Garment shall have a bias binding around the edges of the vest. The binding shall have a 0.5” width and shall be of high visibility fluorescent fabrics matching the background mesh.

HVG MARKING MATERIAL
The high visibility tricot trim shall be ANSI 207-2006 compliant. It shall be 4.5” wide and of 100% polyester tricot. The trim color shall be fluorescent lime-yellow color and piece-dyed for stability. All retro-reflective material shall be 3M 8710, 2” wide silver film thermo fuse bonded onto the center of the 2 1/2” wide black cord. Front and Back shall read POLICE in Black Letters.
The fluorescent lime-yellow trim material shall be sewn onto the vest for maximum conspicuity. It shall be sewn vertically over each shoulder, down the front and back and with a horizontal trim band sewn around the torso to maintain 360-degree visibility of wearer.

HVG LABELING
Each garment shall have a VizGuard® by Spiewak woven main label and a woven size and care label sewn under the main label. Each garment shall have an ANSI compliant pictogram denoting ANSI 207-2006 compliance and a 3M woven label.

HVG CLOSURES
The front zipper closure shall be a #5, heavy-duty black nylon molded zipper that shall measure approximately 8” long (size 2XL).

HVG SIZING
The garment is available in the following size range to promote year round use and so that wearer can adjust Safety Vest for use in warmer climates over a t-shirt and for colder weather over a Department issued Duty Jacket:

<table>
<thead>
<tr>
<th>Size</th>
<th>Equivalent Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>(XS – Medium)</td>
</tr>
<tr>
<td>XXL</td>
<td>(Large – 2XL)</td>
</tr>
<tr>
<td>4XL</td>
<td>(3XL – 4XL)</td>
</tr>
<tr>
<td>6XL</td>
<td>(5XL – 6XL)</td>
</tr>
</tbody>
</table>

NOTE:
Size 2XL shall have a front length of 25” and a center back length of 25” so as not to deny access to wearer's
equipment belt or other items worn by wearer or external.

**HVG SIZE ADJUSTMENT SYSTEM**
The side closures shall be constructed of compliant trim, as specified, on both sides utilizing Power Hook and Loop closures for 360-degree visibility of wearer at all times. The Power Hook and Loop shall be heavy-duty, fluorescent yellow color. The side adjustment pieces shall consist of two horizontal 1” loop pieces sewn the width of the front horizontal trim panel and two 1” x 4.5” hook pieces sewn on the loose adjustable trim portion to attach to the under panel. The size adjustment system must allow for a minimum of 24” of adjustment.

**HVG POCKETS AND ENHANCEMENTS**
There shall be an inside pocket on the wearer’s left side utilizing Power Hook and Loop closures so that the safety vest can be stored in the pocket when not in use thus keeping the vest clean. There shall be two silver, retro-reflective mic tabs, one on each shoulder, measuring 4 ¾” long x 1” wide with a center opening for mic attachment measuring 1 7/8” wide. There shall also be two pen pockets, one on each side of the vest, measuring 4 ½” long x ¾” wide and made of ANSI 207-2006 compliant lime-yellow tricot. The pen pockets shall be placed on the tricot starting at the top of the side adjustment band and placed closest to the zipper on both sides. The garment shall have a 5-point breakaway Power Hook and Loop breakaway system at the shoulders, sides, and front closure for wearer’s safety.
WeatherTech® Systems Airflow Duty Jacket
Spiewak Model# SH3466 -- NO SUBSTITUTIONS

General Design
The parka shall be a full zip to the neck waterproof/windproof/breathable garment with taped seams, a waterproof, three-piece drop in hood, zipper tracks for optional jacket/liner inserts, and optional Hidden Agenda™ pull down panels for safety and visibility of wearer when needed. All measurements mentioned in the construction specifications are based on stock size Large/Regular.

Shell Fabric:
The shell fabric shall be 3.8oz/yd² 100% Invista™ Tactel® 280D Supplex® Air Texturized Nylon or equal, with a non-ravel polyurethane back coating, and durable water repellent finish. The construction shall be 110 x 54. The shell fabric shall be available in colors Dark Navy, Black, Brown and Police Green.

Shell Fabric Performance Requirements

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight, oz/yd²</td>
<td>ASTM D3776, Opt C</td>
</tr>
<tr>
<td></td>
<td>3.8oz/yd² (±5%)</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>ASTM D5034 C.R.E</td>
</tr>
<tr>
<td>(Minimum Newtons)</td>
<td>Grab Method</td>
</tr>
<tr>
<td></td>
<td>Warp 550</td>
</tr>
<tr>
<td></td>
<td>Fill 950</td>
</tr>
<tr>
<td>Tear Strength</td>
<td>ASTM D1424</td>
</tr>
<tr>
<td>(minimum Newtons)</td>
<td>Pendulum Method</td>
</tr>
<tr>
<td></td>
<td>Warp 10</td>
</tr>
<tr>
<td></td>
<td>Fill 25</td>
</tr>
<tr>
<td>Abrasion Resistance</td>
<td>ASTM D 4966</td>
</tr>
<tr>
<td>Cycles (minimum).</td>
<td>Martindale Method</td>
</tr>
<tr>
<td>End point when two threads break</td>
<td>20000 minimum</td>
</tr>
<tr>
<td>under 9kPa applied pressure with</td>
<td>multidirectional abrasion</td>
</tr>
<tr>
<td>Seam Slippage (lbf)</td>
<td>ASTM D 434 C.R.E.</td>
</tr>
<tr>
<td></td>
<td>Warp: NIL</td>
</tr>
<tr>
<td></td>
<td>(¼” SO, 67 STB)</td>
</tr>
<tr>
<td></td>
<td>Fill: NIL</td>
</tr>
<tr>
<td></td>
<td>(¼” SO, 81 STB)</td>
</tr>
<tr>
<td>Spray Rating</td>
<td>AATCC 22</td>
</tr>
<tr>
<td>Dimensional Stability, (maximum %)</td>
<td>100, 100, 100</td>
</tr>
<tr>
<td>after 5 wash cycles</td>
<td>AATCC 135</td>
</tr>
<tr>
<td></td>
<td>Test (2)III(A)ii</td>
</tr>
<tr>
<td></td>
<td>Warp 3.0</td>
</tr>
<tr>
<td></td>
<td>Fill 3.0</td>
</tr>
</tbody>
</table>

The shell fabric shall also meet the following Colorfastness Requirements:

<table>
<thead>
<tr>
<th>Colorfastness to Crocking</th>
<th>Gray scale for Staining</th>
<th>Wet: min 4.5</th>
<th>Dry: min 4.5</th>
<th>AATCC 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Colorfastness to Gray Scale Shade Change

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Gray Scale for Staining</th>
<th>Shade Change: min 4.5</th>
<th>AATCC 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perspiration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staining of:</td>
<td></td>
<td>acetate - min 4.5</td>
<td></td>
</tr>
<tr>
<td>cotton - min 4.5</td>
<td></td>
<td>nylon - min 4.5</td>
<td></td>
</tr>
<tr>
<td>polyester - min 4.5</td>
<td></td>
<td>acrylic - min 4.5</td>
<td></td>
</tr>
<tr>
<td>wool - min 4.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Colorfastness to Washing Shade Change

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Gray Scale for Staining</th>
<th>Shade Change: min 4.0</th>
<th>AATCC 61 2A*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staining of:</td>
<td></td>
<td>acetate - min 4.5</td>
<td></td>
</tr>
<tr>
<td>cotton - min 4.5</td>
<td></td>
<td>nylon - min 4.0</td>
<td></td>
</tr>
<tr>
<td>polyester - min 4.5</td>
<td></td>
<td>acrylic - min 4.5</td>
<td></td>
</tr>
<tr>
<td>wool - min 4.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Modified. 45 min – mechanical wash at 105°F on 0.15% 1993 AATCC standard reference detergent WOB solution with 50 steel balls – 150 ml liquor volume.

### Colorfastness to Water Shade Change

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Gray Scale for Staining</th>
<th>Shade Change: min 4.5</th>
<th>AATCC 107</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Key to AATCC Gray Scale Rating (applies to all above)

- **Class 5** – Negligible or no color alteration
- **Class 4** – Slight color change
- **Class 3** – Noticeable color change
- **Class 2** – Considerable color change
- **Class 1** – Much color alteration

### Lining

The lower inside shell body, full sleeve, hood, and yoke shall be backed by a lining fabric which shall be a WeatherTech® performance fabric of 100% 210T nylon with a waterproof, windproof, and breathable laminate coating. It shall have a Moisture Vapor Transmission Rate of 2000g/m²/24hr Minimum (ASTM E96 procedure BW coating facing water) and Hydrostatic Resistance Rating of 2000mm Minimum (AATCC 127).

All lining joining seams (except attachments to mesh) shall be sealed with hot air applied sealing tape to prevent leakage and protect garment integrity. All mesh shall be covered by the WeatherTech® layer behind yokes.
The main label shall be sewn on a separate label carrier made of two plies 210T nylon lining material and the carrier shall measure 4” wide x 4 ¼” long. The carrier shall be centered and sewn into the collar and shall include size label, country of origin, and branding labels. There shall be a hanger loop of shell material centered and sewn in at the neckline of the inside of the garment. The top collar of the shell garment shall be lined with two plies of lining fabric to form a waterproof barrier.

There shall be two inside storage pockets of Nylon Tactel™ shell fabric. Each pocket shall have a 6” YKK, #3 nylon, coil, and non-separating zipper closure. Each pocket shall measure approximately 8 ½” deep by 6 ½” wide.

**Mesh Lining**

There shall be a mesh lining running behind the entire upper portion of the shell rain shed yoke openings to allow for maximum ventilation. The mesh shall be 100% polyester, 80G/Sq M, 150cm, Azo-free, yarn size 50 denier, knit machine 28 gauge, 9 stitches per inch, 1 mm holes, black color and shall have a two way stretch minimum 20% one way and 35% the other way. The mesh lining shall be approximately 9½” high from HPS.

**Snap Ups**

There shall be 16 female snaps: 6 in each front inside pocket (3 rows of 2 snaps each in each pocket that shall be reinforced with pieces of fabric. These snaps shall be hidden inside the pocket bag), and 4 snaps in lower center back. All snaps for the snap-ups shall be of a matte finish. There shall be 4 male snaps on the front waistband (2 on each side) which shall be hidden snaps, allowing for 3 levels of shortening by snap-up to the 12 female snaps on the inside pockets. There shall be 2 male snaps centered on the back elastic waistband allowing for 2 levels of shortening by snap-up to the 4 female snaps in the center back.

**Front**

There shall be a double storm placket over the front zipper to create a waterproof fly down the front of the jacket extending into the collar. The outside fly shall measure 27 ½” long by 2 ¾” wide. It shall be set with a ½” single needle stitch from the top of the collar to the jacket bottom around the perimeter of the placket. The storm placket shall have sturdy interlining material for a professional appearance. There shall be a pen pocket located on the inside of the left placket measuring 1” wide by 6” long.

There shall be six hidden 24-ligne black oxidized female high compression snaps spaced to correspond with the six 24-ligne black oxidized male high compression snaps on the inner storm placket. The inner storm placket shall measure approximately 27½” long by approximately 1½” wide. It shall have interlining and be set with a ¼” single needle stitch from the top of the collar to the jacket bottom around the perimeter of the placket. The front zipper shall be a #5 two-way YKK Delrin zipper, 27½” long.
There shall be inside zippers sewn on top of the front zipper tape on both sides to accommodate optional zip-in liner/jackets (S318, S319V, S327, S525V, or S526CF). The inside zippers shall be #5 YKK Delrin reversible measuring 26” long.

There shall be two map pockets on either side of the CF zipper accessed from under the center plackets allowing for access while the CF zipper is closed. The map pockets shall be secured with 9” #3 nylon coil zipper closures. Inside each map pocket shall be a 1” wide by 6” long pen pocket.

There shall be 2 rain-shed yokes with 1½” hem across the chest, one on each side of the CF zipper. The yokes shall be fully lined with waterproof/breathable WeatherTech® nylon and faced with breathable mesh. The mesh shall extend the entire side of each yoke. The yokes shall measure approximately 10¼” in length from HPS by 10” in width to allow ventilation through the mesh lining as well as conceal optional “on demand” Hidden Agenda™ pull down flaps. There shall be a 7” #3 YKK interchangeable zipper set into the yoke on each side to attach the optional corresponding Hidden Agenda™ front panel. There shall be a 5½” deep chest pocket with 5½” zipper closure hidden under each front yoke flange. The yokes shall each close with 2 pieces of power hook fasteners and one center18-ligne ring snap for a clean and neat appearance. Each piece of power hook shall measure approximately ¾” horizontally and 5/8” vertically and shall be placed on both sides of the hidden chest pockets located under each front yoke flange.

**Back**

The back shall have a rain shed yoke with a 1½" hem designed to conceal the optional Hidden Agenda™ I.D. flap system. The yoke shall be fully lined with waterproof/ breathable WeatherTech® nylon and faced with breathable mesh. There shall be three power hook fastener closures measuring ¾” x 5/8” set equidistant on the yoke facing. There shall be a #3 16” YKK interchangeable zipper set into the yoke to attach the optional corresponding Hidden Agenda™ back panel. There shall be a ½” bar tack on each side of the back yoke, placed approximately 1” from the sleeve seam on each side for added stability. At the bottom inside back there shall be a 22” long #3 nylon coil covered zipper for access to the shell fabric for customization after production.

**Collar**

The collar shall be made of two plies of the shell material with an interlining sewn to the top collar for stability and measure 3¾” high. The collar points shall be properly shaped and symmetrical. There shall be a 7” nylon coil zipper opening on the under collar centered approximately 1” from the neckline and 2¼” from the collar top edge for the drop-in hood. The collar shall have an 8½” long x 3/4” wide val cover placed over the zipper in the center of the outer collar to prevent leakage. There shall be 3½” triangle covers on both edges of the collar to secure the optional liner/jacket collars when inserted into the shell parka.

**Sleeves**

The sleeves shall be two-piece, semi-modified dolman construction for complete freedom of movement. There shall be a black enameled eyelet located approximately ¾” up from each cuff to allow for drainage. There shall be 9” #5 nylon coil pit zippers at the joining
seams of the 2 under-sleeves located in the middle of the underarm to allow increased ventilation. The shoulder seams shall have an inside facing on the sleeve side, 1½” wide of WeatherTech® waterproof/breathable material, and taped with sealing tape to prevent leakage.

Cuffs
There shall be a cuff formed of 2 pieces of shell material approximately 1-5/8” wide at the bottom. Half of the cuff shall be heavy-duty 1½” wide elastic stretched and sewn with 2 threads. There shall be a cuff tab adjustment approximately 1½” wide tapering to approximately 7/8” wide by 3” long with a female high compression snap. The top half of the cuff shall be interlined and each cuff shall have three male high compression snaps for cuff adjustment. There shall be a snap tab at each inside bottom sleeve seam for snapping-in the optional liner/jacket sleeve.

Epaulets
There shall be an epaulet centered on each shoulder starting approximately ¾” from the neckline. The epaulets shall measure 7¼” long by 2” wide at the shoulder point graduating to 1-7/8” wide at the narrow end. The epaulet shall be set with a cross-stitch 1½” wide and shall have a 24 ligne enameled compression snap closure at the point. The underside of each epaulet shall have two hidden female snaps.

Mic Tabs
There shall be one mic tab under each epaulet, snapped to the shoulder seam. The mic tab shall be tapered to fit the shoulder seam and measure 2¼” wide x 4¾” long at the high point. There shall be a mic tab holder measuring 1¾” wide by 7/8” high on the front bottom of each mic tab, located ½” above the bottom edge. There shall be two male snaps 1-1/8” apart set on the top of each mic tab, 5/8” from the top edge that shall snap to the corresponding female snaps on the underside of the epaulets, and there shall be two female snaps likewise positioned on the back of each mic tab that shall snap to corresponding male snaps on the shoulder seam under the epaulets.

Pockets
There shall be two 2-way hand warmer patch front pockets with inverted pleats, measuring approximately 7 ¾” long by 7” wide with flap closures. The pocket flap shall be interlined with a non-woven material. The hand warmer pocket shall be lined with a non-pill micro fleece for warmth and comfort. The pocket flaps shall measure 3¼” long by 7-3/8” wide and shall have mitered corners.

There shall be two 24-ligne hidden female high compression snaps on the pocket flaps for closure. The pockets shall be bar tacked at both the topsides and at the hand warmer opening.

There shall be two vertical security pockets – one on each side - with an 8” x ¾” opening and set in bag with a YKK zipper closure located 1-1/8” from the storm placket and ¾” from the hand warmer pocket. The pockets shall be approximately 7” deep and shall both contain cell phone pocket inserts measuring 5” long by 3½” wide.
**Badge Tab**
The self-fabric badge tab shall be swift-tacked into the hand warmer pocket for optional sew on by wearer. The badge tab shall be 2¼” in length and 7/8” in width when sewn down (3¼” L x 7/8” W unfinished.) The metal eyelets shall be 1-3/8” from the center of one eyelet to the center of the other eyelet.

**Bottom Band**
The front bottom band shall be constructed of 2 plies of shell material, finishing 2-1/8” wide and lined with a non-woven interlining for stability and a clean appearance. There shall be two 24-ligne oxidized male compression snaps on each side, spaced approximately 1½” apart to attach the side vent closure tab when the zipper vent is worn open.

The back band shall be constructed with 1½” wide heavy-duty elastic inserted between the folded shell fabric, stretched and stitched with 2 threads. A 4” by 1-3/8” tab of 2 plies of shell material with a 24-ligne female high compression snap with a black enameled snap cap cover shall allow for closure of the bottom of the zipper vent when the vent is worn open. A corresponding 24-ligne male high compression snap shall be located on the inside back waistband to fold the tab back when not in use.

**Side Vents**
There shall be two side vents measuring approximately 8” long with #5 nylon coil zipper closures to allow access to guns and equipment on either side with a compression snap/tab closure (see bottom band). There shall be two black oxidized metal eyelets located above the side vents on each side to allow for water drainage.

**Hood**
There shall be a 3-piece hood constructed of shell material and lined with a Weather Tech® waterproof/breathable lining that shall drop in between the shell and lining at the collar. The hood shall be attached to the bottom of the zipper opening on the under collar. All hood lining joining seams shall be taped with 1” waterproof tape applied by the hot air method to prevent leakage. The hood shall have a tunneled drawcord made of multi strand braided, nylon, 1/8” wide, black in color and sewn into a channel at the perimeter of the hood with adjustment secured by a disk style #3 2-hole flat keeper lock. The keeper lock shall measure approximately 5/8” long and shall be black in color. The draw cord shall exit the hood tunnel via two 14-ligne black oxidized, metal eyelets on each side of the hood placed 1” from end of hood channel opening to center of eyelet.

**Optional High Visibility Pull Down Panels**
Optional high visibility pull down panels are available constructed from high performance retro-reflective material in high visibility yellow fluorescent color for both the front and rear of the jacket. The panels provide enhanced personnel conspicuity and recognition on demand and also provide a positive professional image.

Panel: The base panel is fabricated from a tough weather and solvent resistant fabric backed tape that will be sewn on to the Panel Carriers that zip on/off the jacket (see...
sections on Back and Front).

**Base Panel:** The base panel is composed of silver cube corner (micro prism) retro-reflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilized polymeric film. The prism surfaces are coated with a vacuum deposition of aluminum to provide a mirror surface to the prism facets. A knit fabric backing is provided to facilitate sewing. Materials utilizing “glass-bead” or other similar retro-reflective technologies are not equivalent. The base panel is constructed of a primary base and a color layer. The silver primary base is constructed of the following layers (from top to bottom):

- Micro prism Structures
- Metalization
- PSA then Knit Fabric

Table 1: Typical Values for Silver Primary Base

<table>
<thead>
<tr>
<th>Observation</th>
<th>Entrance Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>5°</td>
</tr>
<tr>
<td>0.2°</td>
<td>1000</td>
</tr>
<tr>
<td>0.33°</td>
<td>400</td>
</tr>
<tr>
<td>1°</td>
<td>35</td>
</tr>
</tbody>
</table>

(All values in cd\lux\m^2)

On top of the silver primary base there is a color layer. The color layer is constructed of the following layers of material (from top to bottom):

- Enhanced Surface Protection
- 6mil Fluorescent Yellow-Green Vinyl

The finished base panel is lime-green and screen processed using a custom-shade gray.

Table 1: Finished Base Panel Fluorescent yellow-green chromaticity coordinates (from ANSI/ISEA 107-2010)

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.387, 0.610</td>
</tr>
<tr>
<td>2</td>
<td>0.356, 0.494</td>
</tr>
<tr>
<td>3</td>
<td>0.398, 0.452</td>
</tr>
<tr>
<td>4</td>
<td>0.460, 0.540</td>
</tr>
</tbody>
</table>

Table 2: Typical Values for Fluorescent Yellow-Green Finished Base Panel

<table>
<thead>
<tr>
<th>Observation</th>
<th>Entrance Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>5°</td>
</tr>
<tr>
<td>0.2°</td>
<td>800</td>
</tr>
<tr>
<td>0.33°</td>
<td>320</td>
</tr>
<tr>
<td>1°</td>
<td>28</td>
</tr>
</tbody>
</table>

(All values in cd\lux\m^2)
**Titles:** The title laminated on the panel utilizes the Euro-style font, be CAD-cut for uniform consistency and is fabricated from GP430 Blue material, a tough weather and solvent resistant tape designed to be fused on to high visibility base panels. The GP430 is composed of cube corner (micro prism) retro-reflective elements integrally bonded to a flexible, smooth-surfaced tough and weather resistant UV stabilized polymeric film. The prism surfaces are coated with a vacuum deposition of aluminum to provide a mirror surface to the prism facets. Materials utilizing “glass-bead” or other similar retro-reflective technologies are not equivalent. All titles and lettering are sized per the dimensions given below.

**Panel Carrier:** The front panel carriers measure approximately 7.5” wide X 4” long. The panel carrier is constructed of two layers of shell fabric in color black and sewn together with properly finished edges and a non-woven inter-lining. The panel carrier has the slide fastener side of a 7.5” #3 YKK interchangeable zipper sewn onto top seam so that the zipper can be used to zip on to the other side of the zipper track on the jacket. The lower back corners have an approximately 1” square section of power hook -hook side, sewn approximately ¼” from the edges of the panel. The power hook sections match corresponding power hook and loop sections on the yoke linings of the jacket. The front base panels are sewn to the front panel carriers with a stitch line going all the way around the base panel approximately ¼” to 1/8” from the edge of the base panel. The base panel is positioned as far down on the panel carrier as practical.

The back panel carrier is constructed like the front carrier panels and measures approximately 16” long x 5” wide and uses a 16”, #3 YKK interchangeable zipper. The back base panel is sewn to the back panel carrier with a stitch line going all the way around the base panel approximately ¼” to 1/8” from the edge of the base panel. The base panel is positioned as far down on the panel carrier as practical.

**Emblems:** Each garment shall have an Agency emblem attached to each shoulder centered ½” below the shoulder seam. Emblems will be provided by the Agency.

**Colors**  
Dark Navy (011)

**Sizes**  
Regular: S – 5XL  
Long: M – 5XL
MALE S/S POLICE UNIFORM SHIRT

**Description:** SPIEWAK SPDU60Z -- NO SUBSTITUTIONS

**Sizes:** 14.5-18.5 Standard, 19 and up Special

**Color:** Federal Blue

**Fabric:** TIC 351353PT 55% Polyester/45% Wool 8-8 ½ oz. Tropical Weave

**Collar:** The collar points shall be medium spread approximately 3" in length. The outside edge of the collar shall be stitched with a ¼" edge stitch. The collar width at the back of the neck shall be 1 ¾". The inside collar stand shall have a sateen fabric lining for comfort. There shall be a collar stay sewn inside the collar along the bottom edge of each collar to hold the collar shape and still allow the attachment of collar brass. The collar shall be designed to wear with the collar points spread.

**Sleeves:** The sleeves shall be one piece sewn into the shoulder, and finished with a 1" clean turn-up with no loose threads. The sleeves and side closing seams shall be attached to the body of the shirt with an overlock and a safety stitch for reinforcement.

**Epaulets:** The epaulets shall be sewn onto the shoulder seam and shall extend to within ½” of the collar seam. The epaulet shall button at point 1” from the collar seam. The epaulet shall be 2 1/8” wide at the shoulder seam and taper to 1 5/8”, then to a point. The overall length of the epaulet shall be approximately 8”. The epaulet shall be double thickness with a single edge stitch on the perimeter. The epaulets shall be box stitched to shoulders with row of cross-stitching 2 1/2” from sleeve head seam. There shall be a hidden ligne 16 button attached 1 3/8” from the epaulet attachment button on each side under each epaulet to attach a unique microphone sling (patent applied for) to insure that the radio microphone is in the proper place to be deployed.

**Front:** The front shall have a center facing 1-1/2” wide placket extending from the collar to the bottom of shirt. The placket shall have an interlining for stability and a neat appearance and shall be ¼” top stitched on each side. The center front placket shall contain vertical buttonholes placed 3/4” from edge and 3-1/2” apart. There shall be a button at the neck corresponding with the top buttonhole, which shall be set horizontally. There shall be a spare ligne 20 button sewn into the inside button facing. There shall be a hidden zipper sewn under the front placket of the shirt. There shall be 4 rectangular bands of silicone approximately 3 1/8” x 9/16” sewn 2” above the bottom of exterior shirt tail edge on front and back. The silicone bars are designed to work with the corresponding SPDU pant waistband for maximum shirt retention (SRS® shirt retention system).

**Back:** The garment shall have a straight yoke back located approximately 4 ¼” below the collar seam. The inside yoke shall be lined with 100% Polyester Taffeta.

**Pockets:** The shirt shall have two Military-styled box pleated, breast patch pockets with 3-point button down flaps. The breast pocket shall be 5 5/8” wide X 6 3/8” long. The center bellows pleat shall be 1 ½” wide. The bottom corners of the pocket shall be cut on a 40 degree angle and shall be 1 ¼” long. The pocket flaps shall be slightly tapered and shall be 6” wide at the top and 6 ¼” wide at the outside points on the bottom of the flap.

The flaps shall be attached to the shirt body 1/4” above the top of the pocket, resulting in a complete pocket measurement of 6 3/8” long. The pocket shall be edge stitched around the perimeter and shall finish with a 3/8” turn down. The pocket corners shall be reinforced with a triangle stitch in each corner. There shall be a pencil opening on both the left and right flap. The two outside points of each pocket flap shall have concealed Velcro™ closures. The left breast pocket shall have a sewn pencil compartment approximately 1-5/8” wide. Each flap shall have a ligne 20 buttons sewn to a false
buttonhole on the surface of the flap. (Pocket dimensions shall be graded by shirt size/dimension).

**Mic Ports:** Each shirt shall have ¼" inch merrowed holes positioned under each front pocket flap and under each shoulder epaulet. These holes shall be centered under each flap and under each epaulet so to be absent from view when worn.

**Hidden Chest Pocket:** There shall be a #3 YKK 6 ½" concealed zipper under the front placket on right side of shirt. The pocket height shall be 9" with the pocket width extending from the facing seam to the side seam. The center of the zippered opening shall be centered at the mid-point between the top of the chest flap and the bottom of the chest pocket. The top of the concealed pocket shall align with the top of the pocket flap. Concealed shirt pocket shall be made of shirting material.

**Badge Tab:** The badge eyelets shall be reinforced on the inside of the shirt by means of a strip of self material measuring 1" wide, edge stitched and folded so that no raw edges appear. The reinforcement strip is to extend from the flap setting stitch to the joining seam at the front of the yoke. There shall be two small (horizontal) sewn eyelets 1-1/4" apart sewn through the left front and the reinforcement strip with the bottom buttonhole located 1-1/4" above the top of left flap.

**Nameplate Tab:** There shall be a reinforcement piece of shirt fabric to be held in place by round embroidered eyelets centered ½" above the right pocket flap with the eyelets spaced 1 5/8" apart from center to center.

**Front:** The shirt shall also have two permanent 1/16" wide military creases permanently sewn down each side from shoulder seam to bottom of the shirt and centered through each front pocket and pocket flap.

**Button:** All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

**Emblems:** Each garment shall have an Agency emblem attached to each shoulder centered ½" below the shoulder seam. Emblems will be provided by the Agency.

**Shirt sizes:** Men's Numeric Sizes (14.5,15,15.5,16,16.5,17,17.5,18,18.5,19-19.5,20-20.5,21-21.5)
**FEMALE S/S POLICE UNIFORM SHIRT**

**Description:** SPIEWAK SPDU61Z -- NO SUBSTITUTIONS

**Sizes:** 30-44 Standard, 46 and up Special

**Color:** Federal Blue

**Fabric:** TIC 351353PT 55% Polyester/45% Wool 8-8 ½ oz. Tropical Weave

**Style:** The Shirt shall be standard military style with shirrtails and permanently sewn front and back creases.

**Tailoring:** This garment shall be constructed according to the principles set forth in the specifications. All stitches shall be of the proper tension and size so as to avoid puckering after the shirt has been laundered and to give best durable press performance. All sewing shall be with polyester core thread to match the shirt fabric. The collar shall be single stitched 1/4” from edge. The pockets, flaps and epaulets shall be edge stitched. The shirtsleeve bottom shall be finished with a 1” clean finished.

**Collar:** The collar points shall be medium spread approximately 3” in length. The outside edge of the collar shall be stitched with a ¼” edge stitch. The Collar width at the back of the neck shall be 1 ¾”. The inside collar stand shall be made of a seateen fabric for comfort. There shall be a collar stay sewn inside the collar along the bottom edge of each collar to hold the collar shape and still allow the attachment of collar brass. The collar shall be designed to wear with the collar points spread.

**Sleeves:** The sleeves shall be one piece sewn into the shoulder, and finished with a 1” clean turn-up with no loose threads. The sleeves and side closing seams shall be attached to the body of the shirt with an overlock and a safety stitch for reinforcement.

**Epaulets:** The epaulets shall be sewn onto the shoulder seam and shall extend to within ½” of the collar seam. The epaulet shall button at point 1” from the collar seam. The Epaulet shall be 2” wide at the shoulder seam and taper to 1 1/2”, then to a point. The overall length of the epaulet shall be approximately 5/8”. The epaulet shall be double thickness with a single edge stitch on the perimeter. The epaulets shall be box stitched to shoulders with row of cross-stitching 1 5/8” from sleeve head seam. There shall be a hidden button attached 1 3/8’ from the epaulet attachment button on each side under each epaulet to attach a unique microphone sling (patent applied for) to insure that the radio microphone is in the proper place to be deployed.

**Front:** The front shall have a center facing 1-1/2” wide placket extending from the collar stand to the bottom of shirt. The placket shall have an interlining for stability and a neat appearance and shall be ¼” top stitched on each side. The center front shall contain six (6) vertical buttonholes placed 3/4” from edge and 3-1/2” apart. There shall be a button at the neck corresponding with the top buttonhole, which shall be set horizontally. There shall be an 18-ligne snap between the third and fourth button from the top to keep the shirt from gapping. There shall be an inside facing of self-material on the button side 3 1/4” wide extending from the collar to bottom of shirt. The buttons shall be securely attached shall correspond to the buttonholes on the center facing. There shall be a spare ligne 20 button sewn into the inside button facing. There shall be a hidden zipper under the front placket of the shirt.

There shall be 4 bands of silicone 3 1/8” X 9/16” sewn into the bottom of the shirt 2” from the designed to work with the corresponding SPDU pant waistband for maximum shirt retention (**SRS® shirt retention system**).
Back: The garment shall have a straight yoke back located approximately 4 ¼" below the collar seam. The inside yoke shall be lined with 100% Polyester Taffeta.

Pockets: The shirt shall have two Military-styled box pleated, breast patch pockets with 3-point button down flaps. The breast pocket shall be 5 ¼" wide X 5 3/8" long. The center pleat shall be 1 ¼" wide. The bottom corners of the pocket shall be cut on a 40 degree angle and shall be 1 ¼" long. The pocket flaps shall be slightly tapered and shall be 5 3/8" wide at the top and 5 ¼" wide at the outside points on the bottom of the flap. (Pocket dimensions will vary with size). The flaps shall be attached to the shirt body 1/4" above the top of the pocket, resulting in a complete pocket measurement of 6" long. The pocket shall be edge stitched around the perimeter and shall finish with a 3/8" turn down. The pocket corners shall be reinforced with a triangle stitch in each corner. There shall be a pencil opening on both the left and right flap. The two outside points of each pocket flap shall have concealed Velcro closures. The left breast pocket shall have a sewn pencil compartment approximately 1-5/8" wide. Each flap shall have a ligne 20 button sewn to a false buttonhole on the surface of the flap.

Mic Ports: Each shirt shall have ¼" inch merrowed holes positioned under each front pocket flap and under each shoulder epaulet. These holes shall be centered under each flap and under each epaulet so to be absent from view when worn.

Hidden Chest Pocket: There shall be a #3 YKK 6 ½" concealed zipper under the front placket on left side of shirt. The pocket height shall be 9" with the pocket width extending from the facing seam to the side seam. The center of the zippered opening shall be centered at the mid-point between the top of the chest flap and the bottom of the chest pocket. The top of the concealed pocket shall align with the top of the pocket flap. Concealed shirt pocket shall be made of shirting material.

Badge Tab: The badge tab is to be reinforced on inside of the shirt by means of a strip of material 1" wide edge stitched and folded so that no raw edges show. The reinforcement strip is to extend from the flap setting stitch to the joining seam at the front of the yoke. There shall be two small (horizontal) buttonholes, 1-1/4" apart sewn through the left front and the reinforcement strip with the bottom buttonhole located 1-1/4" above the top of left flap.

Nameplate Tab: There shall be a reinforcement piece of shirt fabric to be held in place by round embroidered eyelets centered ½” above the right pocket flap with the eyelets spaced 1 5/8” apart from center to center.

Front: The shirt shall also have two permanently sewn 1/16” wide military creases down each side from the shoulder seam to the bottom of the shirt centered through each front pocket and pocket flap.

Button: All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

Emblems: Each garment shall have an Agency emblem attached to each shoulder centered ½” below the shoulder seam. Emblems will be provided by the Agency.

Shirt sizes: Chest sizes: 30 – 48 (even sizes)
MALE L/S POLICE UNIFORM SHIRT

Description: SPIEWAK SPDU65Z -- NO SUBSTITUTIONS
Sizes: See Size Chart Below
Color: Federal Blue
Fabric: TIC 351353PT 55% Polyester/45% Wool 8-8 ½ oz. Tropical Weave

Style: The Shirt shall be standard military style with shirrtails and permanently stitched two (2) front and three (3) back creases.

Tailoring: This garment shall be constructed according to the principles set forth in the specifications. All stitches shall be of the proper tension and size so as to avoid puckering after the shirt has been laundered and to give best durable press performance. All sewing shall be with polyester core thread to match shirt fabric. The collar and cuffs are to be single stitched 1/4” from edge. The pockets, flaps and epaulets shall be edge stitched.

Collar: The collar points shall be medium spread approximately 3” in length. The outside edge of the collar shall be stitched with a ¼” edge stitch. The collar width at the back of the neck shall be 1 ¾”. The back of the stand shall measure 1-1/2”. The inside collar shall be made of a sateen fabric for comfort. There shall be a collar stay sewn inside the collar along the bottom edge of each collar to hold the collar shape and still allow the attachment of collar brass. There shall be hidden triangle collar button-down tabs sewn underneath each collar point approximately 1” wide (at the attachment point) and 7/8” long. These tabs shall attach to hidden durable ligne 14 buttons which to keep the collar secure.

Sleeves: The sleeves shall be one piece sewn into the shoulder, tapering into the finished cuffs with pressed double pleats. The cuffs shall be attached to the sleeve with a 3/8” double needle stitch and shall be 2-5/8” in width; fastening with two durable ligne 20 4 hole 100% polyester buttons. The cuffs shall be made of two pieces of base shirt material with an interlining. There shall be a shirt cuff opening with a facing of shirt material 7” X 1” tapering to a point with a closure stitch across the facing 1 ½” from the point. There shall be a buttonhole approximately 4” from the point to attach a ligne 16 durable 100% polyester button. The button shall be attached to the inside facing which shall be bound with 5/8” bias cut shirt material for reinforcement. The sleeves and side closing seams shall be attached to the body of the shirt with a merrow and a safety stitch for reinforcement.

Epaulets: The epaulets shall be sewn onto the shoulder seam and shall extend to within ½” of the collar seam. The epaulet shall button at point 1” from the collar seam. The Epaulet shall be 2 1/8” wide at the shoulder seam and taper to 1 5/8”, then to a point. The overall length of the epaulet shall be approximately 8”. The epaulet shall be double thickness with a single edge stitch on the perimeter. The epaulets shall be box stitched to shoulders with row of cross-stitching 2 1/2” from sleeve head seam. There shall be a hidden ligne 16 button attached 1 3/8” from the epaulet attachment button on each side under each epaulet to attach a unique microphone sling (patent applied for) to insure that the radio microphone is in the proper place to be deployed.

Front: The front shall have a center facing 1-1/2” wide placket extending from the collar stand to the bottom of shirt. The placket shall have an interlining for stability and a neat appearance and shall be ¼” top stitched on each side. The center front shall contain six (6) vertical buttonholes placed 3/4” from edge and 3-1/2” apart. There shall be a button at the neck corresponding with the top buttonhole, which shall be set horizontally. There shall be a hidden zipper sewn under the center front placket. There shall be an inside facing of self-material on the button side 3 1/4” wide extending from the collar stand to bottom of shirt. The buttons shall be securely attached shall correspond to the buttonholes on the center
facing. There shall be a spare line 20 and line 16 button sewn into the inside button facing. There shall be 4 bands of silicone 3 1/8" X 9/16" sewn into the bottom of the shirt 2" from the bottom and 1/4" on the inside of the outer creases designed to work with the corresponding SPDU pant waistband for maximum shirt retention (SRS™ shirt retention system)

Back: The garment shall have a straight yoke back located approximately 4 1/4" below the collar seam. The inside yoke shall be lined with 100% Polyester Taffeta.

Pockets: The shirt shall have two Military-styled box pleated, breast patch pockets with 3-point button down flaps. The breast pocket shall be 5 5/8" wide X 6 3/8" long. The center pleat shall be 1 1/2" wide. The bottom corners of the pocket shall be cut on a 40 degree angle and shall be 1 3/4" long. The pocket flaps shall be slightly tapered and shall be 6" wide at the top and 6 1/4" wide at the outside points on the bottom of the flap. (Pocket dimensions will vary with size) The flaps shall be attached to the shirt body 1/4" above the top of the pocket, resulting in a complete pocket measurement of 6 3/8" long. The pocket shall be edge stitched around the perimeter and shall finish with a 3/8" turn down. The pocket corners shall be reinforced with a triangle stitch in each corner. There shall be a pencil opening on both the left and right flap. The two outside points of each pocket flap shall have concealed Velcro closures. The left breast pocket shall have a sewn pencil compartment approximately 1-5/8" wide. Each flap shall have a ligne 20 buttons sewn to a false buttonhole on the surface of the flap.

Mic Ports: Each shirt shall have 1/4" inch merrowed holes positioned under each front pocket flap and under each shoulder epaulet. These holes shall be centered under each flap and under each epaulet so to be absent from view when worn.

Hidden Chest Pocket: There shall be a #3 YKK 6 1/2" concealed zipper under the front placket on right side of shirt. The pocket height shall be 9" with the pocket width extending from the facing seam to the side seam. The center of the zippered opening shall be centered at the mid-point between the top of the chest flap and the bottom of the chest pocket. The top of the concealed pocket shall align with the top of the pocket flap. Concealed shirt pocket shall be made of shirting material.

Badge Tab: The badge tab is to be reinforced on inside of the shirt by means of a strip of material 1" wide edge stitched and folded so that no raw edges show. The reinforcement strip is to extend from the flap setting stitch to the joining seam at the front of the yoke. There shall be two small (horizontal) buttonholes, 1-1/4" apart sewn through the left front and the reinforcement strip with the bottom buttonhole located 1-1/4" above the top of left flap.

Nameplate Tab: There shall be a reinforcement piece of shirt fabric to be held in place by round embroidered eyelets centered 1/8" above the right pocket flap with the eyelets spaced 1 5/8" apart from center to center.

Creasing: Pockets and pocket flaps shall be uniform in shape and size. The front and back creases shall incorporate a permanent 1/16" stitched crease.
Back: The shirt shall have 3 permanent creases, 1/16" wide on the back panel. One crease shall be located at the center back and shall start at the center of the yoke and continue straight down to the bottom edge of the shirt. Each of the other two creases shall be located at the midway point between the center crease and the shoulder seam on both the left and right sides of the center crease.
Front: The shirt shall also have two permanent stitched 1/16” wide military creases down each side from the shoulder seam to the bottom of the shirt centered through each front pocket and pocket flap.

**Button:** All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

**Emblems:** Each garment shall have an Agency emblem attached to each shoulder centered ½” below the shoulder seam. Emblems will be provided by the Agency.

### MEN’S L/S SIZE CHART

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**FEMALE L/S POLICE UNIFORM SHIRT**

**Description:** SPIEWAK SPDU66Z -- NO SUBSTITUTIONS

**Sizes:** 30-44 Standard, 46 and up Special

**Color:** Federal Blue

**Fabric:** TIC 351353PT 55% Polyester/45% Wool 8-8 ½ oz. Tropical Weave

**Style:**
The Shirt shall be standard military style with shirttails and permanent stitched front and back creases.

**Tailoring:**
This garment shall be constructed according to the principles set forth in the specifications. All stitches shall be of the proper tension and size so as to avoid puckering after the shirt has been laundered and to give best durable press performance. All sewing shall be with polyester core thread to match shirt fabric. The collar and cuffs are to be single stitched 1/4" from edge. The pockets, flaps and epaulets shall be edge stitched.

**Collar:**
The collar points shall be medium spread approximately 3" in length. The outside edge of the collar shall be stitched with a ¼" edge stitch. The collar width at the back of the neck shall be 1 ¼". The back of the stand shall measure 1-1/2". The inside collar stand shall be made of a sateen fabric for comfort. There shall be a collar stay sewn inside the collar along the bottom edge of each collar to hold the collar shape and still allow the attachment of collar brass. There shall be hidden triangle collar button-down tabs sewn underneath each collar point approximately 1" wide (at the attachment point) and 7/8" long. These tabs shall attach to hidden durable ligne 14 buttons which to keep the collar secure.

**Sleeves:**
The sleeves shall be one piece sewn into the shoulder, tapering into the finished cuffs with pressed double pleats. The cuffs shall be attached to the sleeve with a 3/8" double needle stitch and shall be 2-5/8" in width; fastening with two durable ligne 20 4 hole 100% polyester buttons. The cuffs shall be made of two pieces of base shirt material with an interlining. There shall be a shirt cuff opening with a facing of shirt material 7" X 1" tapering to a point with a closure stitch across the facing 1 ½" from the point. There shall be a buttonhole approximately 4" from the point to attach a ligne 16 durable 100% polyester button. The button shall be attached to the inside facing which shall be bound with 5/8" bias cut shirt material for reinforcement. The sleeves and side closing seams shall be attached to the body of the shirt with a merrow and a safety stitch for reinforcement.

**Epaulets:**
The epaulets shall be sewn onto the shoulder seam and shall extend to within ½” of the collar seam. The epaulet shall button at point 1” from the collar seam. The Epaulet shall be 2” wide at the shoulder seam and taper to 1 1/2”, then to a point. The overall length of the epaulet shall be approximately 5 5/8”. The epaulet shall be double thickness with a single edge stitch on the perimeter. . The epaulets shall be box stitched to shoulders with row of cross-stitching 2 1/2” from sleeve head seam. There shall be a hidden ligne 16 button attached 1 3/8” from the epaulet attachment button on each side under each epaulet to attach a unique microphone sling (patent applied for) to insure that the radio microphone is in the proper place to be deployed.

**Front:**
The front shall have a center facing 1-1/2” wide placket extending from the collar stand to the bottom of shirt. The placket shall have an interlining for stability and a neat appearance and shall be ¼” top stitched on each side.

The center front shall contain six (6) vertical buttonholes placed 3/4” from edge and 3-1/2” apart. There shall be a button at the neck corresponding with the top buttonhole, which shall be set horizontally. There shall be an 18 ligne snap between the third and fourth button from the top to keep the shirt from gapping. There shall be a hidden zipper under
Center Front Placket:
The center front placket of the shirt. There shall be an inside facing of self-material on the button side 3 1/4" wide, extending from the collar stand to bottom of shirt. The buttons shall be securely attached shall correspond to the buttonholes on the center facing. There shall be a spare line 20 and line 16 button sewn into the inside button facing. There shall be 4 bands of silicone 3 1/8" X 9/16" sewn into the bottom of the shirt 2" from the bottom and 1/4" on the inside of the outer creases designed to work with the corresponding SPDU pant waistband for maximum shirt retention (SRS™ shirt retention system).

Back:
The garment shall have a straight yoke back located approximately 4 1/4" below the collar seam. The inside yoke shall be lined with 100% Polyester Taffeta.

Pockets:
The shirt shall have two Military-styled box pleated, breast patch pockets with 3-point button down flaps. The breast pocket shall be 5 1/4" wide X 5 3/8" long. The center pleat shall be 1 1/8" wide. The bottom corners of the pocket shall be cut on a 40 degree angle and shall be 1 1/4" long. The pocket flaps shall be slightly tapered and shall be 5 3/8" wide at the top and 5 1/4" wide at the outside points on the bottom of the flap. (Pocket dimensions will vary with size) The flaps shall be attached to the shirt body 1/4" above the top of the pocket, resulting in a complete pocket measurement of 6" long. The pocket shall be edge stitched around the perimeter and shall finish with a 3/8" turn down. The pocket corners shall be reinforced with a triangle stitch in each corner. There shall be a pencil opening on both the left and right flap. The two outside points of each pocket flap shall have concealed Velcro closures. The left breast pocket shall have a sewn pencil compartment approximately 1-5/8" wide. Each flap shall have a ligne 20 button sewn to a false buttonhole on the surface of the flap.

Mic Ports:
Each shirt shall have 1/4" inch merrowed holes positioned under each front pocket flap and under each shoulder epaulet. These holes shall be centered under each flap and under each epaulet so to be absent from view when worn.

Hidden Chest Pocket:
There shall be a #3 YKK 6 1/2" concealed zipper under the front placket on left side of shirt. The pocket height shall be 9" with the pocket width extending from the facing seam to the side seam. The center of the zipper opening shall be centered at the mid-point between the top of the chest flap and the bottom of the chest pocket. The top of the concealed pocket shall align with the top of the pocket flap. Concealed shirt pocket shall be made of shirting material.

Badge Tab:
The badge tab is to be reinforced on inside of the shirt by means of a strip of material 1" wide edge stitched and folded so that no raw edges show. The reinforcement strip is to extend from the flap setting stitch to the joining seam at the front of the yoke. There shall be two small (horizontal) buttonholes, 1-1/4" apart sewn through the left front and the reinforcement strip with the bottom buttonhole located 1-1/4" above the top of left flap.

Nameplate Tab:
There shall be a reinforcement piece of shirt fabric to be held in place by round embroidered eyelets centered 1/2" above the right pocket flap with the eyelets spaced 1 5/8" apart from center to center.

Creasing:
Pockets and pocket flaps shall be uniform in shape and size. The front and back creases shall incorporate permanent 1/16" stitched creases.
Back: The shirt shall have 3 permanent creases, 1/16" wide on the back panel. One crease shall be located at the center back and shall start at the center of the yoke and continue straight down to the bottom edge of the shirt. Each of the other two creases shall be located at the midway point between the center crease and the shoulder seam on both the left and right sides of the center crease.
Front: The shirt shall also have two permanent stitched 1/16” wide military creases down each side from the shoulder seam to the bottom of the shirt centered through each front pocket and pocket flap.

**Button:** All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

**Emblems:** Each garment shall have an Agency emblem attached to each shoulder centered ½” below the shoulder seam. Emblems will be provided by the Agency.

**Shirt sizes:** Chest sizes: 30 – 48 (even sizes)
FEMALE POLICE 6 POCKET UNIFORM PANT

Description: SPIEWAK SPDU67 -- NO SUBSTITUTIONS

Sizes: 4-24 Standard, 26 and up Special

Color: Federal Blue

Fabric: TIC 353613PT 55% Polyester 45% Wool 11-11.5oz Top Dyed

STYLE: The pant shall have a plain front with straight side front pockets, 1" wide belt loops, two back pockets for a clean and professional appearance. The pant cuff shall be of open construction to allow for custom finishing and shall have a 37-inch inseam (unfinished). Female pattern shall be current to Departments standards.

POCKETS: The front pocket opening shall be a minimum 6½" long and be 6" deep from the bottom of the pocket opening. The inside front pocket facing shall be a separate piece of self-material finishing no less than 1" wide. There shall be a hidden vault pocket in the right hand front pocket secured with a #3 YKK invisible zipper. The back pockets will have a minimum opening of 5½" and be 7 1/2" deep. Each back pocket shall have a 1 1/4" loop closure tab with a bar tack located 3/8" from point of attachment to secure the buttonhole. The loop tab shall attach to a ligne 20, durable button. Each pocket corner shall have a 3/8" triangle bar tack for reinforcement.

There shall be two cut in cargo pockets centered on each outside side seam with the top opening positioned 3" below the side pockets. Pocket shall be a minimum of 7" wide (the width increases with graded sizes) X 9 ½" deep. There shall be a center tab on the outside seam attached by two bar tacks to secure a reinforced ligne 14, durable button centered along the bottom edge of the pocket bag. The pocket shall be closed with a #3 YKK nylon coil zipper with a 1" pocket welt. (Hidden & Secure (H&S cargo™) cargo pocket)

BUTTONS: All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

POCKETING: All pocketing shall be heavy-duty black 150 denier 70% polyester / 30% cotton tuxedo pocketing with a minimum thread count of 82 x 64. The waistband and inside seam binding shall be made with pocketing material cut on the bias.

WAISTBAND: The waistband shall be designed to allow for approximately 4" of mechanical expansion though two unique double waistband panels with built in elastic 1 ¼" wide. (Expand On Demand Waistband®). The outer front waistband shall be held with hidden 6" x 1 ¼" elastic attached to a tapered tab of self material. The inside waistband shall be held with 7" x 1 ¼" elastic sewn inside and folded back into a separate enclosed channel joined to the front waistband channel at the top of the front pocket opening. The elastic shall remain concealed even when the waistband is stretched to maximum potential. The curtain shall be made of heavy duty tuxedo pocketing material, bias-cut, and shall have a continuous parallel of 7/16" rectangular piece of silicone designed to work with the corresponding SPDU shirts for shirt retention (SRS® Shirt Retention System). The finished waistband shall be 2 3/4" wide and shall be closed with two crush-proof riveted oxidized metal hook and eyes. The finished waistband shall be set on and shall be stitched below the lower edge through the outer fabric and the waistband curtain.

INNER FLY/CROTCH: The right fly and front crotch linings shall be the same fabric and color as the waistband curtain. There shall be a TC #8000 interlining sewn between the fly and the fly lining to give additional stability and strength to the fly. The right fly lining shall be sewn to the left fly below the zipper and continue centered on the join seam across the inseam and end
1” onto the back seam. A separate French fly made of the outer fabric with a lining of reinforced pocketing shall be sewn to the inside right fly. The fly attachment button shall be a ligne 20, 100% polyester durable button. The button shall pass ASTM 5171-1191, using a .84 kg mass dropped from 67 mm.

**ZIPPER:** The trousers shall close with a #4 YKK brass memory lock zipper and have a brass bottom stop at the base of the zipper chain. A straight bar tack shall be sewn through from the outside of the garment to the inside at the bottom of the fly. The bar tack shall be sewn through the zipper tape; the right and left fly and the right fly lining. The right and left fly shall be joined by an additional bar tack located at level of the bottom zipper stop on the inside of the trouser.

**BELT LOOPS:** Each loop is to be 1” wide of double thickness, with stitching on the face side ¾” from each edge. Except for the center back loop, which shall be tacked on, all loops shall be sewn into the bottom of the waistband and into the rocap.

**CREASING:** The front and back crease in the trouser legs shall incorporate permanent resin bonded silicone crease produced by Creaset™. The crease shall be properly cured to insure that it remains permanent and no amount of home laundering shall remove the crease.

**SEAMING:** The entire trouser is to be seamed with Polyester core or 100% Polyester spun thread.

**BRAID:** Trousers shall have a 1” Black Poly/ Cotton Braid sewn on the top of the side seam to the bottom of the waistband, over the front edge of the pocket. Braid shall wrap the pocket welt of the cargo pocket.

**LABELS:** The trouser shall have a sewn-in label giving care instructions and an outside waistband label which shall be marked with lot number, size, fiber content, and cut number. A permanent size label shall be sewn inside on the hip pocket.

**Sizes:** Female sizes as listed below.

4 6 8 10 12 14 16 18 20 22 24 26 28
**MALE POLICE 6 POCKET UNIFORM TROUSER**

**Description:** SPIEWAK SPDU67 –NO SUBSTITUTEIONS

**Sizes:**
- 28 – 46 Standard
- 48 and up Special

**Color:** Federal Blue

**Fabric:**
- TIC 353613PT 55% Polyester 45% Wool 11-11.5oz Top Dyed

**Style:**
The pant shall have a plain front with straight side front pockets, 1” wide belt loops, two back pockets for a clean professional appearance. The pant cuff shall be of open construction to allow for custom finishing and shall have a 38 ½” inch inseam (unfinished).

**Pockets:**
The front pocket opening shall be a minimum 6½” long and be 6” deep from the bottom of the pocket opening. The inside front pocket facing shall be a separate piece of self-material finishing no less than 1” wide. There shall be a hidden vault pocket in the right hand front pocket secured with a #3 YKK invisible zipper. The back pockets will have a minimum opening of 5½” and be 7 1/2” deep. Each back pocket shall have a 1 1/4” loop closure tab with a bar tack located 3/8” from point of attachment to secure the buttonhole. The loop tab shall attach to a ligne 20, durable button. Each pocket corner shall have a 3/8” triangle bar tack for reinforcement.

There shall be two cut in cargo pockets centered on each outside side seam with the top opening positioned 3” below the side pockets. Pocket shall be a minimum of 7” wide (the width increases with graded sizes) X 9 ½” deep. There shall be a center tab on the outside seam attached by two bar tacks to secure a reinforced ligne 14, durable button centered along the bottom edge of the pocket bag. The pocket shall be closed with a #3 YKK nylon coil zipper with a 1” pocket welt. *(Hidden & Secure (H&S cargo™) cargo pocket)*

**Buttons:**
All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

**Pocketing:**
All pocketing shall be heavy-duty black 150-denier 70% Polyester/30% Cotton tuxedo pocketing with a minimum thread count of 82 x 64. The waistband and inside seam binding shall be made with pocketing material cut on the bias.

**Waistband:**
The waistband shall be designed to allow for 4” of mechanical expansion though two unique double waistband panels with 1¼” elastic built in. *(Expand on Demand® waistband)* The front waistband shall be held with a hidden 6” X 1 1/4” elastic attached to a tapered tab of self-material. The inside waistband shall be held with 7” X 1 ¼” elastic sewn to the waistband inside fold back to a separate enclosed channel which is joined to the front waistband channel at the top of the front pocket opening. The elastic shall remain concealed even when the waistband is stretched to its maximum length. The curtain, shall be made of the heavy duty tuxedo pocketing material listed above, bias-cut, and shall have a continuous parallel 7/16” wide silicone band designed to work with the corresponding SPDU shirt for maximum shirt retention *(SRS® Shirt Retention System)*. The finished waistband shall be 2 3/4” wide and shall be closed with two crush-proof riveted oxidized metal hook and eyes. The finished waistband shall be set on and shall be stitched below the lower edge through the outer fabric and the waistband curtain.

**Inner Fly/Crotch:**
The right fly and front crotch linings shall be the same fabric and color as the waistband curtain. There shall be a TC #8000 interlining sewn between the fly and the fly lining to give additional stability and strength to the fly. The right fly lining shall be sewn to the left fly below the zipper and continue centered on the join seam across the inseam and end
1" onto the back seam. A separate French fly made of the outer fabric with a lining of reinforced pocketing shall be sewn to the inside right fly. The fly attachment button shall be a ligne 20, 100% polyester durable button. The button shall pass ASTM 5171-1191, using a .84 kg mass dropped from 67 mm.

There shall be a diamond shaped reinforced crotch gusset measuring 9" wide X 4 ¾" sewn with a five needle safety stitch to prevent crotch seam failure.

**Zipper:**

The trousers shall be closed with a #4 YKK brass memory lock zipper and have a brass bottom stop at the base of the zipper chain. A straight bar tack shall be sewn through from the outside of the garment to the inside at the bottom of the fly. The bar tack shall be sewn through the zipper tape; the right and left fly and the right fly lining. The right and left fly shall be joined by an additional bar tack located at level of the bottom zipper stop on the inside of the trouser.

**Belt Loops:**

There should be a minimum of 5 lined belt loops on waist sizes 28, 29, 30, and a minimum of 7 lined loops on all sizes over 30. Each loop is to be 1" wide of double thickness, with stitching on the face side ⅜" from each edge. Except for the center back loop, which shall be tacked on, all loops shall be sewn into the bottom of the waistband and into the rocap.

**Creasing:**

The front and back crease in the trouser legs shall incorporate a permanent resin bonded silicone crease produced by the Creaset™ System. The crease shall be properly cured to insure that the crease is permanent so that no amount of home laundering shall remove the crease.

**Seaming:**

The entire trouser is to be seamed with Polyester core or 100% Polyester spun thread. If necessary, use steam iron, low setting.

**Labels:**

The trouser shall have a sewn-in label giving care instructions and an outside waistband label which shall be marked with lot number, size, fiber content, and cut number. A permanent size label shall be sewn inside on the hip pocket.

**Braid:**

Trousers shall have a 1" Black Poly/ Cotton Braid sewn on the top of the side seam to the bottom of the waistband, over the front edge of the pocket. Braid shall wrap the welt of the cargo pocket.

**Sizes:**

Men’s waist sizes as listed below.

28 29 30 31 32 33 34 35 36 37 38 40 42 44 46 48 50 52 54 56 58 60
**Description:** SPIEWAK SPDU68 – NO SUBSTITUTIONS

**Sizes:** 4-24 Standard, 26 and up Special

**Color:** Federal Blue

**Fabric:** TIC 353613PT 55% Polyester 45% Wool 11-11.5oz Top Dyed

**STYLE:** The pant shall have a plain front with straight side front pockets, 1" wide belt loops, two back pockets for a clean and professional appearance. The pant cuff shall be of open construction to allow for custom finishing and shall have a 37-inch inseam (unfinished). Female pattern shall be current to Departments standards.

**POCKETS:** The front pocket opening shall be a minimum 6½" long and be 6" deep from the bottom of the pocket opening. The inside front pocket facing shall be a separate piece of self-material finishing no less than 1" wide. There shall be a hidden vault pocket in the right hand front pocket secured with a #3 YKK invisible zipper. The back pockets will have a minimum opening of 5½" and be 7 1/2" deep. Each back pocket shall have a 1 1/4" loop closure tab with a bar tack located 3/8" from point of attachment to secure the buttonhole. The loop tab shall attach to a ligne 20, durable button. Each pocket corner shall have a 3/8" triangle bar tack for reinforcement.

**BUTTONS:** All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

**POCKETING:** All pocketing shall be heavy-duty black 150 denier 70% polyester / 30% cotton tuxedo pocketing with a minimum thread count of 82 x 64. The waistband and inside seam binding shall be made with pocketing material cut on the bias.

**WAISTBAND:** The waistband shall be designed to allow for approximately 4" of mechanical expansion through two unique double waistband panels with built in elastic 1 ¼" wide. (Expand On Demand Waistband®). The outer front waistband shall be held with hidden 6" x 1 ¼" elastic attached to a tapered tab of self material. The inside waistband shall be held with 7" x 1 ¼" elastic sewn inside and folded back into a separate enclosed channel joined to the front waistband channel at the top of the front pocket opening. The elastic shall remain concealed even when the waistband is stretched to maximum potential. The curtain shall be made of heavy duty tuxedo pocketing material, bias-cut, and shall have a continuous parallel of 7/16" rectangular piece of silicone designed to work with the corresponding SPDU shirts for shirt retention (SRS® Shirt Retention System). The finished waistband shall be 2 3/4" wide and shall be closed with two crush-proof riveted oxidized metal hook and eyes. The finished waistband shall be set on and shall be stitched below the lower edge through the outer fabric and the waistband curtain.

**INNER FLY/CROTCH:**

The right fly and front crotch linings shall be the same fabric and color as the waistband curtain. There shall be a TC #8000 interlining sewn between the fly and the fly lining to give additional stability and strength to the fly. The right fly lining shall be sewn to the left fly below the zipper and continue centered on the join seam across the inseam and end 1" onto the back seam. A separate French fly made of the outer fabric with a lining of reinforced pocketing shall be sewn to the inside right fly. The fly attachment button shall be a ligne 20, 100% polyester durable button. The button shall pass ASTM 5171-1191, using a .84 kg mass dropped from 67 mm.

**ZIPPER:** The trousers shall close with a #4 YKK brass memory lock zipper and have a brass bottom stop at the base of the zipper chain. A straight bar tuck shall be sewn through from the outside of the garment to the inside at the bottom of the fly. The bar tack shall be
sewn through the zipper tape; the right and left fly and the right fly lining. The right and left fly shall be joined by an additional bar tack located at level of the bottom zipper stop on the inside of the trouser.

**BELT LOOPS:** Each loop is to be 1” wide of double thickness, with stitching on the face side ¾” from each edge. Except for the center back loop, which shall be tacked on, all loops shall be sewn into the bottom of the waistband and into the rocap.

**CREASING:** The front and back crease in the trouser legs shall incorporate permanent resin bonded silicone crease produced by Creaset™. The crease shall be properly cured to insure that it remains permanent and no amount of home laundering shall remove the crease.

**SEAMING:** The entire trouser is to be seamed with Polyester core or 100% Polyester spun thread.

**BRAID:** Trousers shall have a 1” Black Poly/ Cotton Braid sewn on the top of the side seam to the bottom of the waistband, over the front edge of the pocket.

**LABELS:** The trouser shall have a sewn-in label giving care instructions and an outside waistband label which shall be marked with lot number, size, fiber content, and cut number. A permanent size label shall be sewn inside on the hip pocket.

**Sizes:** Female sizes as listed below.

4 6 8 10 12 14 16 18 20 22 24 26 28
MALE POLICE 4 POCKET UNIFORM TROUSER

Description: SPIEWAK SPDU68 – NO SUBSTITUTIONS

Sizes: 28 – 46 Standard, 48 and up Special

Color: Federal Blue

Fabric: TIC 353613PT 55% Polyester 45% Wool 11-11.5oz Top Dyed

Style: The pant shall have a plain front with straight side front pockets, 1” wide belt loops, two back pockets for a clean professional appearance. The pant cuff shall be of open construction to allow for custom finishing and shall have a 38 ½” inch inseam (unfinished).

Pockets: The front pocket opening shall be a minimum 6½” long and be 6” deep from the bottom of the pocket opening. The inside front pocket facing shall be a separate piece of self-material finishing no less than 1” wide. There shall be a hidden vault pocket in the right hand front pocket secured with a #3 YKK invisible zipper. The back pockets will have a minimum opening of 5½” and be 7 1/2” deep. Each back pocket shall have a 1 1/4” loop closure tab with a bar tack located 3/8” from point of attachment to secure the buttonhole. The loop tab shall attach to a ligne 20, durable button. Each pocket corner shall have a 3/8” triangle bar tack for reinforcement.

Buttons: All buttons shall be 100% Polyester and shall pass ASTM 5171-1191.84 kg mass dropped from a height of 67mm.

Pocketing: All pocketing shall be heavy-duty black 150-denier 70% Polyester/30% Cotton tuxedo pocketing with a minimum thread count of 82 x 64. The waistband and inside seam binding shall be made with pocketing material cut on the bias.

Waistband: The waistband shall be designed to allow for 4” of mechanical expansion though two unique double waistband panels with 1¼” elastic built in. (Expand on Demand® waistband) The front waistband shall be held with a hidden 6” X 1 1/4” elastic attached to a tapered tab of self-material. The inside waistband shall be held with 7” X 1 ¼” elastic sewn to the waistband inside fold back to a separate enclosed channel which is joined to the front waistband channel at the top of the front pocket opening. The elastic shall remain concealed even when the waistband is stretched to its maximum length. The curtain, shall be made of the heavy duty tuxedo pocketing material listed above, bias-cut, and shall have a continuous parallel 7/16” wide silicone band designed to work with the corresponding SPDU shirt for maximum shirt retention (SRS® Shirt Retention System). The finished waistband shall be 2 3/4” wide and shall be closed with two crush-proof riveted oxidized metal hook and eyes. The finished waistband shall be set on and shall be stitched below the lower edge through the outer fabric and the waistband curtain.

Inner Fly/Crotch: The right fly and front crotch linings shall be the same fabric and color as the waistband curtain. There shall be a TC #8000 interlining sewn between the fly and the fly lining to give additional stability and strength to the fly. The right fly lining shall be sewn to the left fly below the zipper and continue centered on the join seam across the inseam and end 1” onto the back seam. A separate French fly made of the outer fabric with a lining of reinforced pocketing shall be sewn to the inside right fly. The fly attachment button shall be a ligne 20, 100% polyester durable button. The button shall pass ASTM 5171-1191, using a .84 kg mass dropped from 67 mm.

There shall be a diamond shaped reinforced crotch gusset measuring 9” wide X 4 ¾” sewn with a five needle safety stitch to prevent crotch seam failure.
Zipper: The trousers shall be closed with a #4 YKK brass memory lock zipper and have a brass bottom stop at the base of the zipper chain. A straight bar tack shall be sewn through from the outside of the garment to the inside at the bottom of the fly. The bar tack shall be sewn through the zipper tape; the right and left fly and the right fly lining. The right and left fly shall be joined by an additional bar tack located at level of the bottom zipper stop on the inside of the trouser.

Belt Loops: There should be a minimum of 5 lined belt loops on waist sizes 28, 29, 30, and a minimum of 7 lined loops on all sizes over 30. Each loop is to be 1” wide of double thickness, with stitching on the face side ⅜” from each edge. Except for the center back loop, which shall be tacked on, all loops shall be sewn into the bottom of the waistband and into the rocap.

Creasing: The front and back crease in the trouser legs shall incorporate a permanent resin bonded silicone crease produced by the Creaset™ System. The crease shall be properly cured to insure that the crease is permanent so that no amount of home laundering shall remove the crease.

Seaming: The entire trouser is to be seamed with Polyester core or 100% Polyester spun thread. If necessary, use steam iron, low setting.

Braid: Trousers shall have a 1” Black Poly/ Cotton Braid sewn on the top of the side seam to the bottom of the waistband, over the front edge of the pocket.

Labels: The trouser shall have a sewn-in label giving care instructions and an outside waistband label which shall be marked with lot number, size, fiber content, and cut number. A permanent size label shall be sewn inside on the hip pocket.

Sizes: Men’s waist sizes as listed below.

28 29 30 31 32 33 34 35 36 37 38 40 42 44 46 48 50 52 54 56 58 60