INCH-POUND
GL/PD-06-03
19 April 2006

PURCHASE DESCRIPTION

JACKET, FLEECE COLD WEATHER (GEN III)

1. SCOPE.

1.1 Scope. This document covers the requirements for double needle bar raschel warp knit, high pile, double velour jacket shall be used to provide the environmental protection, user comfort; lightweight and durability needed for wear in field, combat, and operation other than war.

2. CLASSIFICATION. The fleece jacket shall be color Foliage Green. The fleece shirt shall be of one type in the following sizes:

Small - Regular
Medium - Regular
Large - Regular
Extra Large - Regular

Large - Long
Extra Large - Long

3. SALIENT CHARACTERISTICS.

3.1 Description. The fleece jacket has a center front opening with a one way slide fastener closure backed by a wind protection flap. It also has a collar, raglan sleeves with stretch grid fleece side panels, two internal upper chest pockets, and nylon reinforcements at the collar and elbows. Nylon/lycra binding is used on bottoms of the sleeves. The Jacket bottom is hemmed. The slide fastener has a thong. This design provides a garment that is lightweight, low bulk, has environmental protection, and comfort.

3.2 Material.

* 3.2.1 Basic Material. The basic material for the fleece jacket shall be 100% virgin filament polyester, color Foliage Green 504. The construction shall be a double needle bar raschel warp knit, high pile, double velour (see 7.4). The fabric shall conform to the physical requirements specified in Table I when tested as specified in Table I. Unless otherwise specified, the fabric shall be conditioned and tested in accordance with ASTM D-1776.

TABLE I. Material Requirements.

CHARACTERISTIC	REQUIREMENT	TEST METHOD
Fiber Identification	100% Polyester	AATCC-20 1/
Weight, oz. per square yard	6.4 ± 0.6	ASTM D-3776 (Method C)
Thickness, inch (max):		
Initial	0.12	ASTM D-1777 1/
After laundering	0.12	AATCC –135, (1)(III)(A)ii, 3 cycles and ASTM D-1777 1/
Stitches per inch	22 ± 1	ASTM D-3887
Pile Height, inch		
Face & Back	3/32 - 7/32	3.2.2.3 2/
Air Permeability, ft^3/ft^2/min (min)	350	ASTM D-737
Colorfastness to:		
Laundering, rating	3.0 - 4.0	AATCC -61, Option 2a, 3 cycles
Crocking, rating (min)	Dry – 4.0 /Wet – 3.0	AATCC- 8
Light (Xenon), rating (min)	4	AATCC -16, Option E (170 kj)
Dimensional Stability, percent (max):		AATCC–135, (1)(III)(A)ii, 3 cycles
Wale	5.0	
Course	8.0	
Stretch, Course direction, percent (min)	30	ASTM – 2594 (Loose Fit)
Compressed volume, cubic inches (max)	21.0	3.2.2.1
Thermal insulation, Clo (min)	1.3	3.2.2.2
Color	Foliage Green 504	3/
Toxicity	4/	5/

1/ At pressure of 0.6 pounds per square inch.
2/ Certificate of compliance
3/ Color Matching. The color and appearance of the material shall match the standard sample when viewed using the AATCC Evaluation Procedure 9, Option A, with sources simulating artificial daylight D75 illuminant with a color temperature of 7500 ± 200 K illumination of 100 ± 20 foot candles, and shall be a good match to the standard sample under incandescent lamplight at 2856 ± 200K.
4/ The finished cloth shall not present a dermal health hazard when used as intended and tested as specified in footnote 5/.
5/ Toxicity assessment. The contractor must furnish information, which certifies that the finished product is composed of materials, which have been safely used commercially or provided sufficient toxicity data to show compatibility with prolonged, direct skin contact. At a minimum, toxicity data should include results from a primary dermal irritation study in laboratory animals and a repeated insult human patch test (Modified Draize Procedure) (See 7.3.3). The latter must be conducted under the supervision of a qualified dermatologist using at least 100 free-living individuals. All finishes/chemicals used to process the garment shall be identified and accompanied by the appropriate Material Safety Data Sheet (MSDS)

information. The use of chemicals recognized by the Environmental Protection Agency (EPD) as human carcinogens is prohibited.

3.2.2 Fabric testing methods.

3.2.2.1 Compressed Volume Test Method.

Summary: Fabric compressibility is measured by using a standard fabric area that is subjected to a standard pressure or force while contained in standard cylinder. The test does not account for any trim types that might impact a fabric's packability in the finished form. Its purpose is to standardize fabric area, pressure applied, and limiting volume to determine a volume that is achieved when a particular fabric is exposed to a standard set of compression conditions.

Sample: One specimen, 20" x 20", shall be cut from the fabric to be tested.

Apparatus: A tensile tester (in accordance with ASTM D-5034) shall be used. A compression attachment consisting of a lower attachment is a 3.5" inner diameter and 13" high cylinder that is etched along the outside of the cylinder 12" from the inner bottom of the cylinder. The upper attachment is a plunger made of similar material that is approximately 3.25" in diameter and drilled with holes to allow for airflow out during the test.

Method: The 20" x 20" fabric specimen is folded in half once and then rolled. It is placed in the cylinder below the 12" etch line. The plunger is lowered to the 12" etch line and the test commences. The plunger descends at a rate of 24 in/min. Once a resistant force of 45 pounds is achieved the plunger shall be stopped and the distance traveled by the plunger is subtracted from 12" to determine the compressed height. The fabric should not have escaped through the small area between the inside of the cylinder and the plunger during the test. If it did the fabric should be removed, shaken out, re-rolled, and retested. If there is any indication of permanent deformation another sample should be taken. Fabric volume in the compresses condition is then determined by the following equation: Volume (cubic inches) = 9.621 x compressed height (in inches).

3.2.2.2 Thermal Insulation Test. Thermal conductivity shall be tested as follows:

Apparatus: A Reeves Brothers Thermal Conductivity tester shall be used. The tester consists of a highly insulated chamber containing an air circulating device and electrical heaters. One end of the chamber is closed by the test specimen. Electrical input controls and temperature measuring means are external.

Procedure: A 16" x 16" test specimen is clamped to the face of the preheated test chamber with the insulated side of the specimen facing inwardly. Starting temperature is noted and the test is continued until equilibrium of the inside temperature is reached as noted by identical readings of temperature at 30 minute intervals with a fixed electrical input of 70 watts. The test is conducted in a constant temperature room.

Results: Results are reported in terms of temperature rise over room temperature. The highest the reading the greater the insulation value of the sample tested.

3.2.2.3 Pile Height Determination: The pile and height of the fleece material shall be measured as follows:

The test specimen shall be a 4-inch by 4-inch piece of the fabric. The specimen shall be placed on a hard, flat surface with the side to be evaluated facing up. The pile of the fabric shall then be brushed with a comb to ensure that the pile is straight up and not matted or distorted. At the cut edge of the specimen and using a ruler, measure the pile height extending from the plane of the knitted fabric (beginning at the wales and courses) to the nearest 1/32-inch. Three test specimens shall be evaluated for each side of the

fabric. The pile height shall be the average of the three determinations made on each side of each of the test specimens; results shall be reported separately for each of the face and back sides of the fabric.

3.2.3 Thread. Thread for needle and bobbin (looper) shall be commercial 100% textured polyester thread, conforming to Type I, Class 1 of A-A-52095. The color of the thread shall match Foliage Green 504.

3.2.4 Labels. The jacket shall have a label in accordance with Type VI, Class 14 of MIL-DTL-32075. The color of the labels shall approximate the ground shade of the basic fabric or white. In addition it shall contain a bar coding label in accordance with Type VIII and Class 17.

3.2.4.1 The combination size, identification and instruction label for the jacket. The top (only) of the combination size and identification label shall be sewn on inside center back (+/- 1 inch off center) and caught in collar closing seam. The instruction label shall be sewn on left chest mesh pocket and stitched on all four sides. The printed labels shall be facing the body and it shall not be visible from the outside when in use. The instruction label shall include the following information:

Machine or Hand Wash Warm,
Tumble dry low or Line Dry
Do Not Bleach
Do Not Iron

3.2.9 Slide fasteners.

3.2.9.1 Center front slide fastener. The center front closure shall use an individual element molded fastener with single slider, size 5-7 with a minimum crosswise breaking strength of 130 lbs., 9/16 inch wide tape, Foliage Green 504 color, conforming to type IV, style 6 of A-A-55634. The lengths for the front opening shall be as follows:

SIZE	INCHES
Small	26.5
Medium	27.5
Large	28.5
X-Large	29.5
Large Long	30.5
X-Large Long	31.5

3.2.9.2 Slide fastener thongs. The thongs for all slide fasteners shall be a 1/8 inch diameter, Foliage Green 504, non-elastic nylon cord.

3.2.10 Fastener Tape, Hook and Loop. The loop fastener tape for the rank patches shall be 1-inch wide, Foliage Green 504 color and conform to type II, class 1 of A-A-55126. The loop tape shall be 5-¼ inches in length ± ¼ inch. The loop fastener tape for the name patch shall be 2 inches wide, Foliage Green 504 color. The tape shall be 2 inches in length ± ¼ inch. The hook and loop fastener tape for the pocket closures shall be 5/8 inch wide, Foliage Green 504 color. The hook and loop tapes shall be 1-½ inches in length ± ¼ inch.

3.2.11 Webbing, Elastic. The elastic webbing for the mesh pocket opening shall be ¾-inch wide and Foliage Green 504 color. The lengths required are as follows:

SIZE	INCHES
Small	10-¾
Medium	11-¾
Large	12-¾
X-Large	13-¾
Large Long	12-¾
X-Large Long	13-¾

3.2.12 Hanger Tape The tape for the hanger loop shall be flat nylon, Foliage Green 504, 3/8-inch in width and conform to the type 3, class 2 requirements of MIL-T-5038. The hanger tape shall be 6 ± ¼ inches for all sizes.

3.2.13 Binding. The binding for sleeve bottom shall be a tricot knit weighing 4.1 ± 0.2 oz. per sq. yd. with a fiber blend of 90% nylon and 10% lycra, slit into a 1-1/2 inch wide binding strip. The color of the thread shall match Foliage Green 504.

3.3 Patterns. The government shall furnish a complete set of patterns or a master pattern with grade rules, to maintain uniformity and consistency in manufacturing. Standard patterns provide an allowance of ½-inch for setting slide fasteners and for all major joining seams. The government patterns shall be used to create the contractor's working patterns. Minor modifications are permitted to accommodate manufacturing procedures however the design and finished measurements shall be maintained.

TABLE II. List of Pattern Parts.

Patten Abbreviation	**Nomenclature**	**Cut Parts**
Fleece:		
FRONT	Front	2
BACK	Back	1
COLLAR	Top Collar	1
SLEEVE	Sleeve	2
Nylon Taslan:		
ELBOW PATCH	Elbow Patch	2
COLLAR	Under Collar	1
Mesh:		
Mesh PKT	Inside Breast Pocket	2
Grid Fleece:		
Z FLAP	Zipper Flap	1
GUS	Side gussets	2

3.4 Construction. End item construction and appearance shall conform to Figure 1 – Fleece Jacket.

3.4.1 Seaming. The seams shall be consistent, exhibit a uniform appearance and conform to the ASTM D-6193, Stitch Types listed in Table III below. The backside of all seams (inside garment) shall be overlocked. All bartacks, shall be 3/8- to 5/8-inch in length with approximately 27 stitches. All material edges shall not ravel; Edges may be either turned-in, turned-under, serged or seared to prevent raveling.

Table III. Seams and Stitch Type

Seaming Areas	Seam Type	Stitch Type
Fold mesh pockets in half. Serge elastic to each edge along back sides.	SSa-1	504
Folding both upper edges of the mesh pockets 1" to the back side over ¾" wide elastic, stitch through elastic and mesh along edge of elastic. Attach ½" wide Velcro hook to inside of top pocket through elastic and mesh. Attach ½" wide Velcro loop to outside of bottom pocket through elastic and mesh. Attach care label to outside of left pocket.	LSbs-1	301
Attach mesh pockets to jacket fronts, along upper edge of back portion of mesh pockets through all layers. Attach mesh pockets to jacket fronts along both side edges.	LSce-2	301
Attach 1" x 5 ¼" Velcro loop to both jacket fronts centered above pocket seam. Attach 2" x 2" Velcro loop on left front centered directly over the 1" x 5 ¼" Velcro loop.	LSbj-1	301
Fold grid fleece zipper flap in half, grid inside, and stitch curves with ¼" seam.	SSbf-3	301
Turn zipper flap to right side (grid side showing) and topstitch finished edge with double-needle machine.	SSc-1	301
Overedge raw edge of zipper flap and front edges	SSa-1	504
Attach taslan elbow patches to sleeve backs .	LSd-1	301
Attach raglan sleeves to front and back of body with double-needle serger.	SSa-2	516
Topstitch raglan sleeve seams on both front and back with ¼" seams from neckline to underarm.	SSa-1	301
Attach side gussets to sleeve/jacket fronts with double-needle serger. Close sleeves and sides with double-needle serger.	SSa-2	516
Turn gusset serge seams toward front and back, then top stitch around gusset with ¼" seam.	SSa-1	301
Attach top edge of taslan collar to top edge of fleece collar with single-needle serger.	SSa-1	504
Turn down serged collar seam and raise-stitch, catching seam.	SSa-1	301
Set undercollar to neckline with single-needle serger. Overedge bottom of fleece collar and bottom edge of jacket with single-needle serger.	SSa-1	504
Set binding on sleeve bottoms, overlapping tail to secure.	BSc-1	301
Turn binding tail to inside of sleeve and bartack.	Bartack	
Attach front zipper with wind protection flap (on left side) from just above top of undercollar ending 1" from bottom edge. Attach fleece collar to inside along zippers, right sides together.	LSba-2 (a & b)	301
Hem bottom of jacket with 1" hem on double-needle hemmer, no top rocker.	EFa-2	605
Turn collar to right side and close at neckline, with size label, and hanger tape at center back. Topstitch around zipper and collar with ¼" seam.	SSa-1	301
Thread non-elastic nylon cord thong in zipper sliders and tie.	Hand	

4. REGULATORY REQUIREMENTS

4.1 Recycled, Recovered, or Environmentally Preferable Materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

5. **PRODUCT CONFORMANCE**

5.1 Product Conformance. The product provided shall meet the salient characteristic of Commercial Item Description, and shall conform to the cited patterns, specifications, standards and quality assurance practices. The Government reserves the right to require proof of such conformance.

5.2 Ouality Conformance Inspection. Sampling for inspection shall be performed in accordance with ANSI/ASQ Z1.4, as specified in the contract or order.

5.3 Component and End Item Inspection. In accordance with 5.1, components and end items shall be tested in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or applicable procurement documents. The Government reserves the right to inspect all components and end items to determine conformance to requirements.

5.4 End Item Visual Examination. The Jacket shall be examined for the major defects listed in Table IV as defined in FED-STD-4.

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TABLE IV. Material and end item examination

EXAMINATION	DEFECT
Material and Workmanship	Component part omitted, distorted, full, tight, or twisted; any part of Jacket caught in any unrelated stitching, the edge of any component part required to be forced out having folds of more than 1/8 inch.
	Hole, cut, tear, smash, burn, drill hole, run, thin place, dye streak, color not as specified, misweave.
	Seam: puckered, distorted, pleated, wavy, twisted, irregular or open, loose or tight stitch tension, broken or missing thread or stitch, needle chew, visible mend, edge or raised stitching sewn too close to edge, resulting in damage to cloth, seam allowance not as specified, raw edge.
	Upper pocket stitch lines more than ¼ inch out of alignment.
	Length of fronts uneven by more than ¼ inch at top or bottom when closed or fronts out of alignment, causing twist when closed.
	Collar uneven in length by ¼ inch or more, collar curls, puckers, pleats, or twists.
	Bartacks or backtacks missing, insecure, misplaced, not specified size, stitches loose or broken, bartack/backtack.
	Sleeves puckered or pleated; uneven in length more than ½ inch, poorly shaped.
Cleanness	Spot, stain, excessive thread ends not trimmed or removed, odor,
Shade	Shade variation within a part or between parts. Thread color not as specified.
Labels	Omitted, incorrect, illegible, not attached where specified; bar-codes omitted, not readable by scanner; human-readable interpretation (HRI) omitted or illegible; bar- code not visible on folded, packaged item; barcode attachment causes damage to the item.
Packaging	Any Jacket not packaged in accordance with the contract or purchase order.

5.5 Finished Dimensions**.** The finished Jacket shall conform to the measurements listed in the Table V.

TABLE V. Finished Measurements (inches)

SIZE	½ CHEST 1/	BACK LENGTH 2/	SLEEVE LENGTH 3/
Small	23	28	33-¾
Medium	25	29	34-¾
Large	27	30	35-¾
Large Long	27	32	37-¼
X-Large	29	31	36-¾
X-Large Long	29	33	38-¼
Tolerance	+/- ½	+/- ½	+/- ½

1/ Half Chest – With front slide fastener and underarm slide fasteners closed, and the Jacket laying flat and smooth, measure from folded edge to folded edge at base of armhole.
2/ Back Length – Measure from collar seam along center back to bottom edge of Jacket.
3/ Sleeve Length – With garment laying face down and sleeve extended flat, measure from center back neck seam straight across to top folded edge of sleeve hem.

6. PACKAGING

6.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order. When actual packaging of material is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Department or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

7. NOTES.

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory unless otherwise stated in the contract or purchase order.)

7.1 Intended use. The GEN III, Fleece Jacket is for wear by soldiers for additional warmth. The jacket is a component of the Third Generation, Extended Cold Weather Clothing System.

7.2 Acceptance criteria. Acceptance criteria shall be as stated in the contract or order.

7.3 Reference documents.

7.3.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in solicitation.

SPECIFICATIONS

MILITARY

MIL-T-5038 - Tape, Textile, Nylon

COMMERCIAL ITEM DESCRIPTION

A-A-50199	-	Thread, Cotton Covered, Polyester Core
A-A-52095	-	Thread, Polyester
A-A-55126	-	Fastener Tape, Hook, and Loop
A-A-55634	-	Fasteners, Slide

(Copies of Military and Federal documents are available from: Standardization Documents Order Desk, Bldg 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094)

7.3.2 Other Government documents, drawings, and publications

FEDERAL TRADE COMMISSION

Rules and Regulations Under the Textile Fiber Products Identification Act

(Copies are available online at www.ftc.gov or from the Federal Trade Commission, 600 Pennsylvania Avenue, N.W., Washington, DC 20580-0001)

7.3.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issue of documents which are DOD adopted shall be those in the issue of the Acquisition Streamlining and Standardization Information System (ASSIST) database cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the ASSIST are the documents cited in the solicitation.

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM D-737 Standard Test Method for Air Permeability of Textile Fabrics
ASTM D-1776 Standard Practice for Conditioning Textiles for Testing
ASTM D-1777 Standard Test Method for Thickness of Textile Materials
ASTM D-2594 Standard Test Method for Stretch Properties of Knitted Fabrics Having Low Power
ASTM D-3776 Standard Test Method for Mass Per Unit Area (Weight) of Fabric
ASTM D-3887 Specification for Tolerances for Knitted Fabrics
ASTM D-5034 Standard Test Method for Breaking Force and Elongation of Textiles (Grab)
ASTM D-6193 Stitch and Seam Types

(For all inquires please contact the American Society for Testing and Materials, 100 Barr Harbor, West Conshohocken, PA 19428-2959). Website address http://www.astm.org.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

AATCC – 8 Colorfastness to Crocking: AATCC Crockmeter Method
AATCC - 16 Colorfastness to Light
AATCC - 20 Fiber Analysis: Qualitative
AATCC - 61 Colorfastness to Laundering, Home and Commercial: Accelerated.
AATCC -135 Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics
AATCC Evaluation Procedure-9 Visual Assessment of Color Difference of Textiles

(For all inquiries please contact the American Association of Textile Chemists and Colorists, P.O. Box 12215, Triangle Park, NC 27709-2215.)

AMERICAN NATIONAL STANDARDS INSTITUTE

ANSI/ASQ Z1.4 - Sampling Procedures and Tables for Inspection of Attributes

(For all inquires please contact the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036. Website address http://www.ansi.org.)

MISCELLANEOUS

Principle and Methods of Toxicology, A Wallace Hayes (editor), pp 394-396, 1989.

(Copies of this document is available from Raven Press, 1185 Avenue of the Americas, New York, NY 10036)

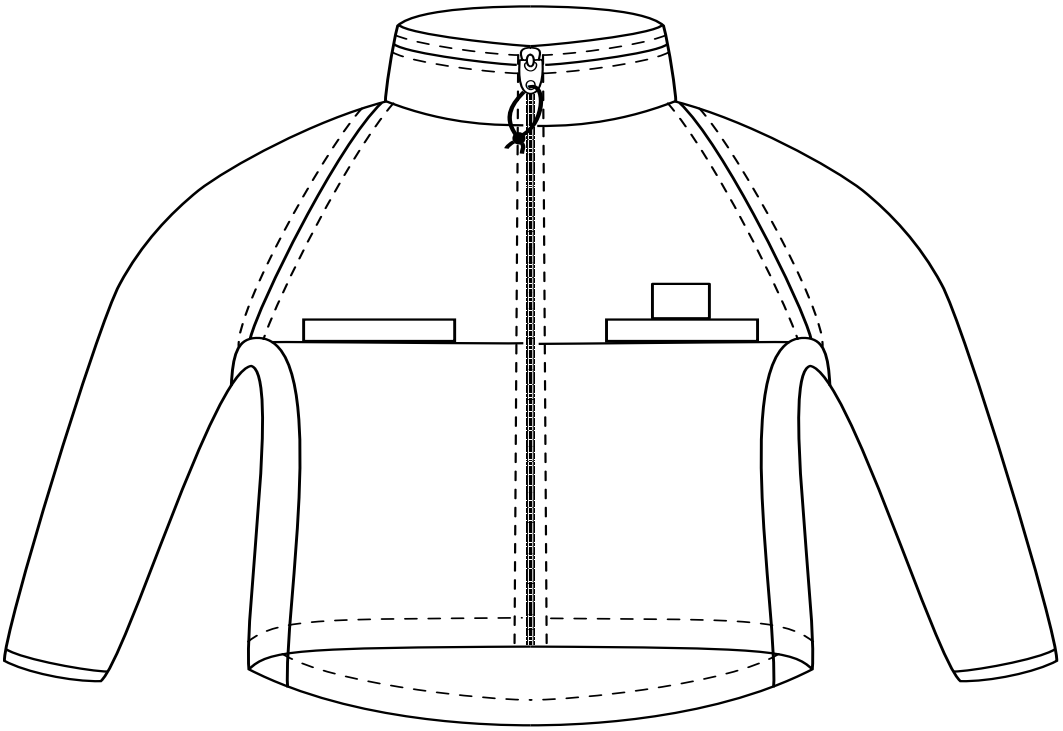
Marzulli, F. and H. Maibach, "Contact Allergy: Predictive Testing in Humans," Advances in Modern Toxicology, Volume 4, pp 353-372, 1977.

(Copies of this document are available from the U.S. Army Center for Health Promotion and Preventative Medicine, ATTN: MCHB-DC-TTE, Bldg., E-2100, Aberdeen Proving Ground, MD 21010-5422.)

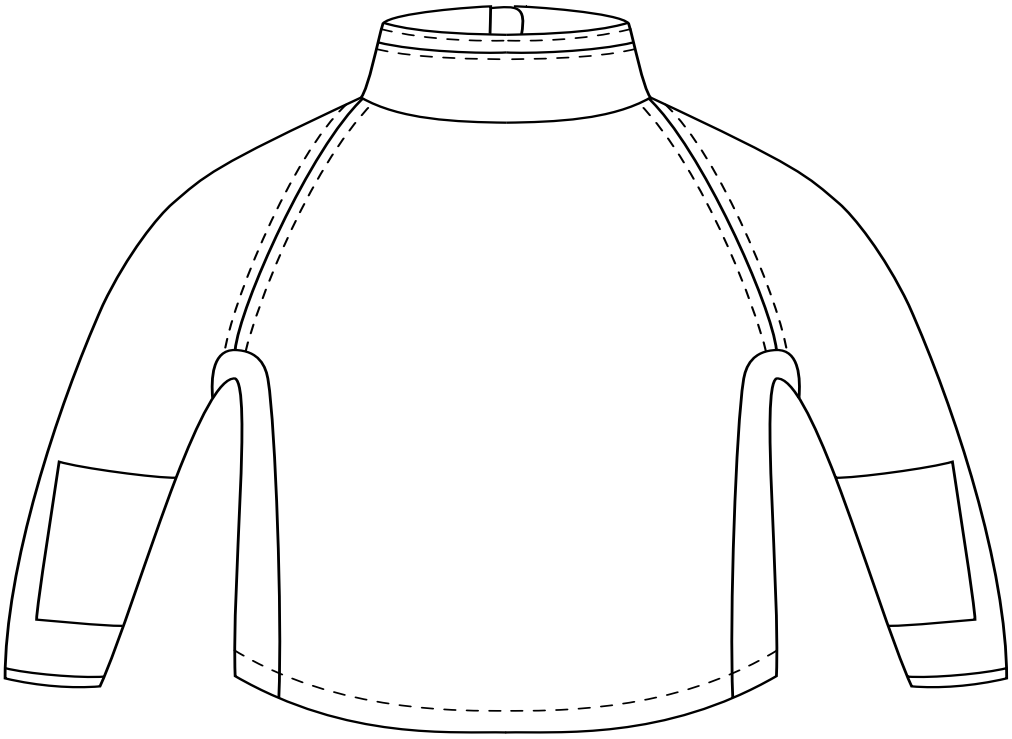
7.4 Source of supply. Sources of suggested supply for the Polartec(R) Thermal Pro ® style 4060.

Malden Mills Industries, Inc.
50 Broadway
Lawrence, MA 01841

7.5 Asterisk (*) denotes change/update has been made to the paragraph compared to previous revision.



Front View



Back View

Figure 1. Fleece Jacket