5100-215E
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Superseding
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May 10, 2019

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

SPECIFICATION FOR

PACK, PERSONAL GEAR M-2014

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be used in improving this document should be addressed: via electronic mail <mailroom_wo_mtdc@fs.fed.us> or U.S. mail to the USDA Forest Service, Missoula Technology and Development Center, 5785 Highway 10 West, MT 59808.

FSC 8465

RECORD OF REVISIONS

This is a complete revision. Numbered sections and appendixes may no longer correspond to those in the previous revision. Major changes are listed below. Minor changes that do not modify the intent of the specification are not listed.

Change	Reason
Remove MIL-C-7219 and replaced with description of material.	Cancelled document
Numerous grammatical and typographical errors corrected	Ease of reading

1. SCOPE.

1.1. Purpose and Applicability.

This specification covers the requirements for the personal gear pack with integral tent and sleeping pad sleeves fabricated from coated nylon duck cloth, nylon webbing, and acetal plastic hardware.

1.2. Interpretations and Definitions.

1.2.1. Interpretation.

To carry out the provisions of this document, the word shall is to be understood as mandatory.

1.2.2. Definitions.

Nonconformity: A departure of a quality characteristic from its intended level or state that occurs with severity sufficient to cause an associated product or service not to meet a specification requirement (per ANSI/ASQ Z1.4).

2. APPLICABLE DOCUMENTS.

2.1. Government Documents.

2.1.1. 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 are in effect on the date of the invitation for bids or request for proposals.

Federal Specifications

A-A-55126 - Fastener Tapes, Hook and Pile, Synthetic

A-A-55634 - Zippers (Interlocking Slide Fasteners)

A-A-59826 - Thread, Nylon

Federal Standards

FED-STD-123 - Marking for Shipment (Civil Agencies)

Military Specifications

MIL-DTL-32075 - Label: For Clothing, Equipage, and Tentage (General Use)

MIL-PRF-5038 - Tape, Textile and Webbing, Textile, Reinforcing, Nylon

MIL-W-5664 - Woven Elastic, Cotton

MIL-W-17337 - Webbing, Textile, Woven Nylon

Unless otherwise indicated, copies of federal and military specifications and standards are available online at http://quicksearch.dla.mil, or in hard copy from the Standardization Documents Order Desk, Building 4D, 700 Robbins Ave., Philadelphia, PA 19111-5094.

USDA Forest Service Specifications

5100-86 - Cloth, Duck, Nylon (Polyurethane Coated)

Copies of USDA Forest Service Specifications and Standards are available from the preparing activity, 6.4.

2.1.2. Other Government documents, drawings, and publications.

USDA Forest Service Drawings

The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals.

MTDC-1103 - Pack, Personal Gear, M-2014

Copies of USDA Forest Service Specifications and Standards are available from the preparing activity, 6.4.

2.2. Nongovernment Publications.

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are in effect on the date of the invitation for bids or request for proposals. Nongovernment standards and other publications are typically available from the organizations that prepare or distribute the documents. These documents may also be available in or through libraries or other informational services.

American Society for Quality (ASQ)

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

Unless otherwise indicated, copies of ASTM specifications and standards are available online at www.asq.org, or in hard copy from the American Society for Quality, P.O. Box 3005, Milwaukee, WI 53201-3005.

American Society for Testing and Materials (ASTM)

D 1056 - Standard Specifications for Flexible Cellular Materials - Sponge or Expanded Rubber

D 1593 - Standard Specification for Nonrigid Vinyl Chloride Plastic Film and Sheeting

D 1974 - Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers

D 3575 - Standard Test Methods for Flexible Cellular Materials Made From Olefin Polymers

D 3576 - Standard Test Method for Cell Size of Rigid Cellular Plastics

D 3951 - Standard Practice for Commercial Packaging

D 5118 - Standard Practice for Fabrication of Fiberboard Shipping Boxes

D 6193 - Standard Practice for Stitches and Seams

E 380 - Practice for the use of the International System of Units

Unless otherwise indicated, copies of ASTM specifications and standards are available online at www.astm.org, or in hard copy from ASTM International, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.

National Motor Freight Traffic Association, INC., Agent

National Motor Freight Classification

Unless otherwise indicated, copies are available online at www.nmfta.org, or in hard copy from National Motor Freight Traffic Association, Inc., 1001 North Fairfax Street, Suite 600, Alexandria, VA 22314.

2.3. Order of Precedence.

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1. First Article.

Unless otherwise specified (6.22), samples shall be subject to first article inspection (4.2.4).

3.2. Materials.

Materials and components shall be as specified herein and in the referenced drawings, MTDC-1103. The contractor is encouraged to use recovered materials to the maximum extent practicable—in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR)—provided all performance requirements of this specification are met.

3.2.1. Cloth, duck, nylon, heavy (polyurethane coated).

The heavy nylon duck shall conform to type II of Forest Service specification 5100-86 and shall be bright red to match the standard shade sample (6.3).

3.2.2. Cloth, duck, nylon, light.

The light nylon duck shall be a 400 denier 5.6 ounce per square yard (before coating) nylon pack cloth. The finished cloth shall have a 3/4 to 1 ounce per square yard urethane coating. The color shall be black.

3.2.3. Padding.

The padding for the shoulder straps shall be soft, flexible, 3/8 inch thick, closed cell, expanded ethylene vinyl acetate copolymer foam with the characteristics listed in Table 1. The padding shall be gray in color.

Table 1. Physical characteristics of padding

Characteristic	Requirement	Test Method
Density	2.2 lb/cu ft minimum	ASTM D 3575
Water absorption	5% maximum	ASTM D 1056
Cell size	0.025 inch maximum	ASTM D 3576

3.2.4. Nylon webbing.

3.2.4.1. Tape, textile and webbing, textile, reinforcing, nylon, 1/2 inch.

The 1/2 inch webbing used for pull tabs and zipper pulls shall conform to type III, size 1/2 of MIL-PRF-5038. The color shall be yellow.

3.2.4.2. Tape, textile and webbing, textile, reinforcing, nylon, 1 inch.

The binding tape shall conform to type III, size 1-inch width of MIL-PRF-5038. The color shall be black.

3.2.4.3. Webbing, textile, woven nylon, 1 inch.

The 1-inch webbing shall conform to class 2 of MIL-W-17337. The color shall be black.

3.2.4.4. Webbing, textile, woven nylon, 2 inch.

The 2-inch webbing shall conform to class 2 of MIL-W-17337. The color shall be black.

3.2.4.5. Webbing, textile, elastic, 1 inch.

The elastic keepers shall be made from elastic cotton webbing in conformance with type I, class 1 of MIL-W-5664, 1 inch wide. The color shall be black.

3.2.4.6. Fastener tape, hook and loop, synthetic, 1 inch.

The 1-inch fastener tape shall conform to type II, class 1 of A-A-55126. The color shall be black.

3.2.4.7. Thread, nylon.

The thread shall conform to type II, class A of A-A-59826. The thread for all flat work and box-x stitching shall be size F unless otherwise specified. Closing seams shall be size FF. Size E may be used for bartacking, label attachment, and ID holder binding attachment. The color for all thread shall be black

3.2.4.8. Zippers.

The slide fasteners shall conform to type I, style 2 (nonlocking slider), size 9 of A-A-55634. The chain shall be nylon or polyester continuous coil configuration conforming to the following requirements:

3.2.4.8.1. Zipper chain.

The diameter of the chain filament shall be 0.033 to 0.050 inch. The width of the chain when closed shall be 0.320 to 0.340 inch. The chain shall be sewn to the tapes. Color of the chain shall be black. All performance requirements governing the crosswise strength of the chain are not applicable except the crosswise breaking strength requirement, which shall be 175 pounds minimum. The crosswise breaking strength shall be performed as specified in A-A-55634 except the fastener shall be preconditioned.

3.2.4.8.2. Zipper tape.

The zipper tape shall be 3/4 +/- 1/16 inch wide, color black, and shall be water repellent treated. The tape shall show good fastness to laundering.

3.2.4.8.3. Zipper slider and pull.

The zippers shall have sliders conforming to the standard long tab pull nonlocking type as specified in A-A-55634, but shall have a swivel type tab. The sliders shall properly fit the chain and shall be brass, aluminum, or other non-corroding metal. The color shall be black.

3.2.4.8.4. Zipper components.

All components of the slide fasteners shall be manufactured by the same company to ensure compatibility of components.

3.2.5. Plastic hardware.

The plastic items specified by 3.2.5.1 through 3.2.5.3 shall be black acetal plastic.

3.2.5.1. Side release buckle, 1 inch.

The 1-inch side release buckle shall conform to ITW Nexus part no. 101-0100; National Molding Corp. part nos. 5205/5206 (male/female); or American Cord & Webbing part no. BSR, 1 inch. Mating components shall be manufactured by the same company to ensure compatibility of components.

3.2.5.2. Side release buckle, 2 inch.

The 2-inch side release buckle shall conform to ITW Nexus part no. 101-1200; National Molding Corp. part no. 5433/ 5432 (male/female); or American Cord & Webbing part no. MSR-2. Mating components shall be manufactured by the same company to ensure compatibility of components.

3.2.5.3. Double-bar buckle, 1 inch.

The 1-inch double-bar buckle shall conform to ITW Nexus part no. 104-0100; National Molding Corp. part no. 4199; or American Cord & Webbing part no. DB 1".

3.2.6. Plastic film, flexible, vinyl chloride.

The vinyl chloride film shall conform to the requirements of type I of ASTM D 1593 and shall be 0.020 inches thick except that it shall meet the physical requirements of 0.0060-inch thick film. The water vapor transmission, impact resistance, slip, and heat seal strength tests are not required.

3.2.7. Labels.

The personal gear pack combination identification and cleaning label shall be a sewn-on coated cloth label conforming to type VI, class 5 of MIL-DTL-32075. The size of inscription characters shall be 1/4 +/-1/16) inch for the identification part and 1/8 (+/-1/32) inch for the cleaning part. The contents shall dictate label size and shall be in the following format:

PACK, PERSONAL GEAR, M-2014

USFS SPECIFICATION 5100-215E

[CONTRACT NO.]1/

[MANUFACTURER'S NAME]1/

DATE OF MANUFACTURE: [mm/yy]1/

CLEANING

DIRT - LET DRY; REMOVE WITH STIFF BRISTLE BRUSH.

LIGHT OIL - BRUSH WITH WARM WATER DETERGENT SOLUTION; RINSE THEN DRY. MAY BE MACHINE WASHED; COLD WATER, GENTLE CYCLE ONLY AND AIR DRIED.

DO NOT BLEACH!

1/ The contractor shall insert the applicable information indicated.

3.3. Construction.

The construction shall conform in all respects to the referenced drawing, MTDC-1103, as specified herein.

3.3.1. Stitches, seams, and stitchings.

All stitching, except bartacking, shall conform to type 301 of ASTM D 6193, 6 to 8 stitches per inch.

3.3.1.1. Type 301 stitching.

Ends of all stitching shall be backstitched or overstitched not less than 1 inch (1/2 inch for box-x) except where ends are turned under or caught in other seams or stitching. Thread tension shall be maintained so there will be no loose stitching resulting in loose bobbin or top thread or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

3.3.1.2. Repairs of type 301 stitching.

Repairs of type 301 stitching shall be as follows (when making the following repairs, the ends of the stitching are not required to be backstitched):

a. When thread breaks or bobbin runouts occur during stitching, except presewing, the stitching shall be repaired by restarting the stitching a minimum of 1 inch (1/2 inch for box-x) back of the end of the stitching.
b. Except for presewing, thread breaks or two or more consecutive skipped or runoff stitches noted during an inspection of the item (in-process or end item) shall be repaired by overstitching. The stitching shall start a minimum of 1 inch in back of the non-conforming area (1/2 inch on box-x), continue over the non-conforming area to a minimum of 1 inch into existing stitching. Loose or excessively tight stitching shall be repaired by removing the non-conforming stitching, without damaging the materials, and restitching in the required manner.

3.3.2. Bartacking.

Bartacking shall be free from thread breaks and loose stitching. Unless otherwise specified, bartacks shall be as follows in Table 2:

Table 2. Bartacking requirements.

Length	Width	Length Tolerance	Width Tolerance	Stitches Per Bartack
1 inch	1/8 inch	1/16 inch	1/32 inch	42
3/4 inch	1/8 inch	1/16 inch	1/32 inch	42
3/8 inch	1/8 inch	1/16 inch	1/32 inch	28

3.3.3. Automatic stitching.

Automatic machines may be used to perform any of the stitch patterns provided the requirements for the stitch pattern, stitches per inch, and size and type of thread are met; and at least 1/2-inch, overlapping, or backstitching is used to secure the ends of the stitching.

3.3.4. Thread ends.

All thread ends shall be trimmed to 1/4-inch maximum length.

3.3.5. Lubrication of thread.

There shall be no lubrication of the thread by any means, before or during sewing (4.2.3).

3.3.6. Stitching margins.

Unless otherwise specified, all stitching margins shall be 1/8 inch.

3.3.7. Fusing ends of nylon webbing.

All ends of webbing shall be fused before assembly for stitching, including bias cuts of webbing. The apparatus used to fuse webbing shall provide enough heat to create a smooth edge and with the cut ends of all webbing yarns fused together.

3.3.8. Location marks.

Location marks may be drilled, providing the drill diameter does not exceed 0.076 inches (4.2.5.1). All drill holes shall be covered on the finished item. Printed location markings shall not exceed 1/32 inch in width.

3.3.9. Repairs.

Repairs such as mends, darns, patches, or splices are not permitted, except as noted.

3.3.10. Piecing.

With the exception of the reinforcements for the shoulder strap and carry handles, no piecing or splicing of components is allowed.

3.3.11. Replacement of non-conforming components.

During the spreading, cutting, and manufacturing process, components having material non-conformities or damages that are classified as non-conformities in 4.2.5.2.1 and 4.2.5.2.2 shall be removed from production and replaced with conforming and properly matched components.

3.3.12. Coated cloth surface.

The coated side of the cloth shall face the inside of the completed personal gear pack.

3.4. Dimensions.

Unless otherwise specified, all dimensions except pattern sizes are finished dimensions.

3.5. Marking.

The letters "NFES" shall be silk screened to the cloth with a black medium in the locations shown on drawing MTDC-1103. Markings shall conform to type IV, class 9 of MIL-DTL-32075. Fastness of the class 9 marking shall be as specified for class 5 marking. The color of the cloth components shall not be visible under the markings.

3.6. Patterns.

The standard patterns showing size, shape, placement of components and location lines for cutting, marking, and folding are shown on drawing MTDC-1103. The drawings provide allowances for seams and shall be used for making the working patterns. The patterns shall not be altered in any way.

3.7. Workmanship

Workmanship shall be equal to the best commercial practices consistent with the highest engineering standards in the industry, and shall be free from any non-conformity, which may impair serviceability or detract from the product's appearance.

3.8. Metric products.

Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch/pound units, provided they fall within the tolerances specified using conversion tables contained in the latest revision of FED-STD-376, and all other requirements of this specification are met.

4. QUALITY ASSURANCE PROVISIONS.

4.1. Responsibility for inspection.

Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his/her own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections or tests set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements. Inspection records of the examination and tests shall be kept complete and available to the Government.

4.1.1. Responsibility for compliance.

All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known non-conforming material—either indicated or actual—nor does it commit the Government to accept non-conforming material.

4.1.2. Responsibility for dimensional requirements.

Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point or at all points in the manufacturing process necessary to ensure conformance with all dimensional requirements.

4.1.3. Certificate of Conformance.

Unless otherwise specified, certificates of conformance (COC) supplied by the manufacturer of the item, component, or material, listing the specified test method and test results obtained, may be furnished in lieu of actual lot by lot testing performed by the contractor (4.2.3). When certificates of conformance are submitted, the Government reserves the right to test such items to determine the validity of the certification. In addition, when the contractor changes component or material suppliers, a new certification based on actual test results shall be required.

4.1.4. Test Results.

The contractor shall have available copies of all test results performed to assure the quality or acceptability of the product submitted for acceptance. The test results shall also show the product's acceptable range or expected test result and the item's test value. All test equipment shall be calibrated and current at the time of testing. Calibration shall be to a recognized State or Federal standard.

4.2. Inspection and tests.

4.2.1. Classification of inspection.

The inspection requirement specified herein are classified as follows:

a. First article inspection (4.2.4.2).
b. Quality conformance inspections (4.2.3).

4.2.2. Component and material inspection.

In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.2.3. Certification of conformance.

Unless otherwise specified (6.2), as part of first article presentations and lot inspections, it shall be acceptable for the contractor to provide certificates of conformance for all materials and components in lieu of lot by lot testing, except as specified in 4.3.2.1. The contractor shall furnish a certificate of conformance for the requirements of 3.3.5 verifying that thread lubricants have not been used before or during sewing. All certificates shall include as a minimum:

Product description, including specification, type, class, and form when applicable
Date of manufacture
Purchase source, address, and telephone number
Purchase date
Lot number traceable to materials used in production

4.2.3.1. Certificates of conformance required.

Cloth, duck, nylon, heavy (polyurethane coated) - 3.2.1
Cloth, duck, nylon, light - 3.2.2
Padding - 3.2.3
½-inch binding tape - 3.2.4.1
1-inch nylon binding tape - 3.2.4.2
1-inch nylon webbing - 3.2.4.3
2-inch nylon webbing - 3.2.4.4
1-inch elastic webbing - 3.2.4.5
1-inch fastener tape - 3.2.4.6
Nylon thread - 3.2.4.7
Zippers - 3.2.4.8
1-inch side release buckle - 3.2.5.1
2-inch side release buckle - 3.2.5.2
1-inch double bar buckle - 3.2.5.3
Plastic film - 3.2.6
Label - 3.2.7

4.2.3.2. Test values.

The contractor shall provide actual test values for the polyurethane coated nylon duck cloth (3.2.1) for each new lot purchased. Such test reports, traceable to each lot used in production of the personal gear pack shall be maintained at the inspection point specified in the contract. Copies of these test reports shall be made available to the Government representative upon request.

4.2.4. First article inspection.

When first articles are required, they shall be inspected and approved under the appropriate provisions of Federal Acquisition Regulation 52.209. Unless otherwise specified, the first article inspection samples submitted in accordance with 3.1 shall be visually and dimensionally inspected as specified in 4.2.5.2.1 and 4.2.5.2.2, grading of the inspections shall be as shown in Table 3. The presence of any nonconformity, whether major or minor or failure to pass any test shall be cause for nonacceptance of the first article submission. All inspection and testing of the first article sample(s) shall stop upon a single failure. The contractor shall be informed as to the nature of the failure, but the Government is not obligated to continue testing an item once it is known to be noncompliant or when it is considered in the best interest of the Government.

Table 3. First article inspection.

Nonconformance	Section	Classification	
		Major	Minor
1. Certificates of conformance missing or incomplete	4.2.4.2	X	
2. End item visual examination not as specified	4.2.5.2.1	X	
3. End item dimensional examination not as specified	4.2.5.2.2	X	

4.2.4.1. First Article Inspection Package.

The contractor shall submit to the Government—along with first articles selected in accordance with 4.2.4.2—copies of:

a. All certificates of conformance (4.2.3).
b. Company inspection records (4.1).
c. All test results for the first article samples (4.1.4).
d. All other information necessary to perform the inspections identified in 4.2.4.

4.2.4.2. Sampling for first article inspection.

Unless otherwise specified, the contractor shall make items available to the Government for the selection of first article samples. The first articles shall be preproduction samples consisting of three completed personal gear packs. First article inspection shall be performed on a product sample(s) in accordance with 4.2.4.

4.2.5. Quality Conformance Inspection

4.2.5.1. In-process inspection.

Inspection shall be made at any point or during any phase of the manufacturing process to determine whether cut lengths and location of assembled component parts are in accordance with specified requirements. Inspection shall be made to determine that holes drilled for location marking do not exceed 0.076-inch diameter and are placed in such a manner that each shall be covered in the finished item (3.3.8). Whenever nonconformance is noted, corrections shall be made to the parts affected and lot in process. Components that cannot be corrected shall be removed from production.

4.2.5.2. End item examination.

Each end item lot shall be sampled and inspected as specified in 4.2.5.2.1.1 and 4.2.5.2.2.1. A sample unit for a lot shall be one complete personal gear pack.

4.2.5.2.1. End item visual examination.

The end items shall be examined for the nonconformities listed in Table 4 on a lot by lot basis. Unless otherwise specified, nonconformities shall be scored on an individual basis, i.e., each seam, each stitching end, each dimension, etc.

Table 4. Lot acceptance inspection and testing.

Examine	Nonconformity	Classification	
		Major	Minor
Nylon duck cloth	Not type specified	X	
	Any hole (except location marks), cut or tear	X	
	Any abrasion mark, smash, slub, broken or missing yarn, multiple floats, or open place, clearly visible at normal inspection distance (3 feet)	X	
	Needle chew NOTE: Needle holes visible as the result of broken or skipped stitching or stitching that has been removed shall not be considered as needle chews, providing that the holes are spaced as in normal stitching.		X
	Color not as specified	X	
	Shade bar, fine or coarse filling bar		X
	Coating non-conforming or partially omitted		X
Webbing	Size or type not as specified	X	
	Color not as specified	X	
	Any hole, cut, tear, or smash	X	
	Abrasion mark, slub, broken end, or pick		X
	Cut ends not fused or not fused as specified	X	
	Not firmly and tightly woven	X	
	Edges frayed or scalloped	X	
	Multiple floats		X

Table 5. Lot acceptance inspection and testing (continued).

Nylon Tape	Size or type not as specified	X	
	Color not as specified	X	
Fastener Tape	Size or type not as specified	X	
	Location not as specified	X	
	Color not as specified	X	
Slide fastener	NOTE: Each slide fastener shall be fully closed and opened three times to determine whether fastener operates smoothly and provides a secure closure.		
	Type, size, or color not as specified	X	
	Does not provide a smooth and secure closure full length of openings	X	
	Slider jams or fails to interlock chain scoops	X	
	Any portion of fastener broken, bent, missing, or not aligned making fastener unusable	X	
	Slide fastener tape not specified width	X	
	Slider not specified type	X	
	Slider not attached as specified	X	
	Chain not material or configuration specified	X	
	Length not as specified	X	
	Components not all manufactured by the same company	X	
Thread	Type, class, or size not as specified	X	
	Any thread lubricated		X
	Color not as specified		X
Hardware, general	Any part broken, cracked, chipped, distorted, twisted, or out of shape	X	
	Any dirt or flash		X
	Any deep scratch or gouge		X
	Gates not trimmed		X
	Surface not smooth		X
	Any pit, void, crazing, air pocket, blister, or imbedded foreign matter that will affect serviceability	X	
	Evidence of spray or jetting marks	X	
Side release	NOTE: Plastic buckles shall be latched and unlatched three times to determine whether they operate smoothly and provide a secure closure.		
	Type, size, or color not as buckles specified	X	
	Mating components not from the same manufacturer	X	
	Latch and latch receptacle do not mate	X	
	Webbing incorrectly threaded through male buckle	X	
	Male buckle upside down		X

Table 6. Lot acceptance inspection and testing (continued).

Double bar buckle	Type, size, or color not as specified	X	
	Position upside down or incorrectly threaded on webbing		X
Plastic film	Type, class, or thickness not as specified	X	
Open seam	NOTE: A seam shall be classified as open when one or more stitches joining a seam are broken or when two or more consecutive skipped stitches or run-offs occur. On double stitched seams, a seam shall be considered open when either one or both sides of the seam are open.		
	1/2 inch or less		X
	More than 1/2 inch	X	
Raw Edge (on edge required to be finished)	More than 1/2 inch when securely caught in the stitching		X
	Note: Raw edge not securely caught in stitching shall be classified as an open seam.		
Run-off	See open seam		
Seam and stitch type	Seam or stitch type not as specified	X	
Bartacks	One or more bartacks omitted		X
	Any bartack not as specified or not in the specified location	X	
	Stitching loose, incomplete, or broken		X
Stitch tension	NOTE: Non-conformities to be scored only when the condition exists for a continuous 4 inches or more, or in several areas with an accumulated distance of 8 inches or more. Applicable to individual seams.		
	Loose, resulting in loose bobbin or top thread	X	
	Excessively tight, resulting in puckering of material	X	
Stitches per inch	NOTE: Variation in the number of stitches per inch caused by the operator speeding up the machine and pulling the cloth in order to sew over heavy places or in turning corners shall be classified as follows: (a) Within the minor non-conformity classification - no non-conformity (b) Within the major non-conformity classification - minor non-conformity Non-conformities to be scored only when a condition exists on any one seam for a length of 6 inches or more or when the combined length of several areas exceeds 10 inches.		

Table 7. Lot acceptance inspection and testing (continued).

	Up to two stitches less than minimum specified		X
	Three or more stitches less than minimum specified	X	
	Two or more stitches in excess of the maximum specified	X	
Stitching margin (not otherwise specified)	NOTE: Non-conformities to be scored only when the condition exists for 4 inches or more or in several areas with an accumulated distance of 8 inches or more. Applicable to individual seams.		
	Exceeds specified tolerance, up to 1/16 inch		X
	Exceeds specified tolerance, over 1/16 inch	X	
Stitching gauge	Not as specified	X	
Stitching ends	Not secured as specified	X	
Thread breaks, skipped stitches or run-offs (unless otherwise classified herein)	NOTE: Thread breaks or two or more consecutive skipped stitches or run-offs not overstitched shall be classified as open seams.		
	Not overstitched as specified	X	
Rows of stitching	Any row missing except on box-x stitching	X	
	On box-x stitching:		
	- One row of stitching is omitted		X
	- Two or more rows of stitching omitted	X	
Automatic stitching	Stitching ends not backstitched patterns as specified, i.e., less than 1/2 inch tying, overlapping, or backstitches	X	
Components and assembly	Any component part omitted or not as specified or any operation omitted or not as specified (unless otherwise classified herein)	X	
	Needle chews	X	
	Any mend, darn, patch, splice, or other unauthorized repair	X	
	Any material pleated or caught in stitch line where not specified		X
Piecing	Any piecing or splicing except as specified	X	
Pleats (on front pockets)	Not formed and sewn separately as specified	X	
Cleanness	Grease, oil, dirt, ink, or other stains clearly noticeable	X	
	Thread ends not trimmed to 1/4 inch or less	X	
Identification and cleaning label	Type or class not as specified	X	
	Incorrect type, size, or information	X	
	Not in the location specified	X	
	Incorrect label margins	X	

Table 8. Lot acceptance inspection and testing (continued).

Location markings	Drill mark exceeds size specified	X	
	Drill mark not covered on the finished item		X
	Printed marking more than 1/32 inch in width or not covered by component part		
Marking: NFES	Omitted, incorrect, illegible, misplaced, or size of characters not as specified	X	
	Type or class not as specified	X	
	Cloth color visible under black marking medium	X	

4.2.5.2.1.1. Sampling for end item visual examination.

Sampling for inspections and tests shall be in accordance with ANSI/ASQ Z 1.4. The lot size shall be expressed in units of complete personal gear packs. The inspection level shall be I, and acceptable quality level (AQL), expressed in terms of non-conformities per hundred units, shall be 4.0 for major non-conformities, and 15.0 for combined major and minor non-conformities.

4.2.5.2.2. End item dimensional examination.

End items shall be examined for the non-conformities listed in Table 5 on a lot by lot basis. Only those dimensions that can be evaluated without damaging or disassembling the end items shall be examined.

Table 9. End item dimensional non-conformity.

Examine	Non-conformity	Classification	
		Major	Minor
Dimensions (overall)	Smaller than nominal dimensions less applicable minus tolerance indicated on drawings, but not smaller than nominal dimensions less twice the applicable minus tolerances		X
	Smaller than nominal dimensions less twice the applicable minus tolerance	X	
	Larger than nominal dimensions and applicable plus tolerance		X
Component and location dimensions (not otherwise classified herein)	Not within the specified tolerance		X
Box-x stitching	Dimensions not as specified		X
Stitch margin	Not within the specified tolerance		X
Carry straps	Not centered by more than 1 inch	X	
Compression straps	Out of horizontal or vertical alignment with corresponding buckle chapes by 1/4 inch or more	X	

4.2.5.2.2.1. Sampling for end item dimensional examination.

Sampling for inspections and tests shall be in accordance with ANSI/ASQ Z 1.4. The inspection level shall be S-3. An AQL, expressed in terms of non-conformities per hundred units, shall be 6.5 major non-conformities and 15.0 for combined major and minor non-conformities.

4.2.5.3. Packaging inspection.

An examination shall be made to determine that packing and marking comply with the section 5 requirements. Non-conformities shall be scored in accordance with Table 6. The sample unit shall be one shipping container fully packaged except that it shall not be palletized and it need not be closed. Shipping containers fully packaged that have not been palletized shall be examined for non-conformities in closure.

Table 6 Packaging Examination

Examine	Nonconformity
Markings	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing or not as specified. Any component damaged, affecting serviceability.
Workmanship	Inadequate application of components, such as: incomplete closure of container flaps, improper taping, loose strapping, inadequate stapling. Bulged or distorted container.
Contents	Number of items per container is more or less than required.

4.2.5.3.1. Sampling for packaging inspection.

The lot size shall be the number of shipping containers in the end item inspection lot. The inspection level shall be S-2 and the AQL shall be 2.5 non-conformities per hundred units.

5. PACKAGING.

5.1. Preservation.

Preservation shall be in accordance with ASTM D 3951 and as specified in the contract or purchase order.

5.1.1. Folding.

All slide fasteners shall be closed and all straps shall be secured with the appropriate hardware. With the pack lying flat, "NFES" marking down, the shoulder straps shall be stowed in the back pocket. With sides and ends of the pack square, the pack shall be flattened, the top and bottom tucked in between the side panels and with the two side pockets folded over the main panel so that the pack forms a neat, flat rectangle.

5.1.2. Unit pack.

Each personal gear pack prepared in accordance with 5.1 and folded in accordance with 5.1.1 shall be inserted into a snug-fitting clear polyethylene bag that completely encloses the personal gear pack. The bag shall be closed in such a manner as to prevent the personal gear pack from falling out.

5.2. Packing.

Ten (10) personal gear packs, packaged as specified, shall be packed into a 23.5” L X 20” W X 30” D corrugated fiberboard box, minimum burst strength 350 psi (minimum edge crush strength 55 pounds per inch width). Boxes shall be type CF (variety SW) or type SF, class domestic, style RSC meeting the requirements of the latest version of ASTM D 5118. Boxes shall be in compliance with the National Motor Freight Classification. Each box shall be closed in accordance with the latest version of ASTM D 1974 except that the inspection shall be in accordance with 4.2.5.3.

5.3. Marking.

In addition to any special marking required by the contract or purchase order, shipping and unit containers shall be marked in accordance with FED-STD-123 with the addition of the applicable National Fire Equipment System (NFES) number (which includes the nomenclature "NFES"), which shall appear on a separate line below the National Stock Number (NSN) of the shipping container only.

5.3.1. Unit pack.

The required marking shall be legibly printed or stamped in black directly on the polyethylene bag across the center face or on a white paper label inserted within the bag so as to permit ready identification.

6. NOTES.

6.1. Intended use.

The personal gear pack is designed to carry a 2-week supply of clothing, personal items, sleeping bag, tent, and ground pad during fire suppression activities and other field assignments. The tent sleeve is intended to contain a personal tent with tent poles that break down to lengths not exceeding 30 inches, the pad sleeve is intended to contain a rolled up sleeping pad that does not exceed 30 inches in width.

6.2. Acquisition Requirements.

Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Whether a first article test is required.
c. Specific instructions regarding arrangements for selection, inspection, and approval of the first article sample(s) when a first article test is required.
d. When lot by lot testing is required in lieu of certificates of conformance.
e. Preservation, packing and marking required in addition to specification requirements.

6.3. Standard shade sample.

Color shade samples for the bright red basic cloth may be obtained from the preparing activity (6.4) and will be provided only to the contractor.

6.4. Preparing Activity.

USDA Forest Service, Missoula Technology and Development Center, 5785 Highway 10 West, Missoula, MT 59808, email: <mailroom_wo_mtdc@fs.fed.us>

6.5. Notice.

When Government drawings, documents, or other data are used for any purpose other than in connection with a related Government procurements operation, the United States Government thereby incurs neither responsibility nor any obligation whatsoever.