

INCH POUND**MIL-F-10884F****30 December 1988****SUPERSEDING****MIL-F-10884E****25 September 1981****MILITARY SPECIFICATION****FASTENERS, SNAP**

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers metal snap fasteners intended for temporary joining of detachable components and parts of clothing, equipage, and tentage items.

1.2 Classification. Snap fasteners shall be of the following styles, finishes, and sizes as specified (see 6.2).

- Style 1 - Large curtain type
- Style 1A - Deleted (see 6.5)
- Style 1B - Mudproof curtain type
- Style 2 - Regular wire spring clamp type
- Style 2A - Small wire spring clamp type
- Style 3 - Pronged ring head type
- Style 4 - Three way locking type
- Style 5 - Scalloped button head type
- Style 6 - Funnel neck button head type
- Style 7 - Rivet type
- Finish 1 - Bright brass
- Finish 2 - Black
- Finish 3 - Nickel plate
- Finish 4 - Bright chrome plate
- Finish 5 - Brown
- Size - (see 3.2.3)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Natick Research, Development and Engineering Center, Natick, MA 01760-5014 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

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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 those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

- P-S-1792 - Soap, Laundry (Neutral and Built)
- FF-S-107 - Screws, Tapping and Drive
- FF-S-111 - Screw, Wood
- QQ-B-613 - Brass, Leaded and Non-Leaded: Flat Products (Plate, Bar, Sheet, and Strip)
- QQ-B-626 - Brass, Leaded and Non-Leaded: Rod, Shapes, Forgings, and Flat Products with Finished Edges (Bar and Strip)
- QQ-C-320 - Chromium Plating (Electrodeposited)
- QQ-N-290 - Nickel Plating (Electrodeposited)
- QQ-W-321 - Wire, Copper Alloy
- PPP-B-566 - Boxes, Folding Paperboard
- PPP-B-636 - Boxes, Shipping, Fiberboard
- PPP-B-665 - Boxes, Paperboard, Metal Edged and Components
- PPP-B-676 - Boxes, Setup
- PPP-T-45 - Tape, Gummed, Paper, Reinforced and Plain, for Sealing and Securing

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- MIL-C-50 - Copper Alloy Number 260 (Cartridge Brass, 70%); Sheet, Strip, Plate, Bar, and Discs
- MIL-F-495 - Finish, Chemical, Black, For Copper Alloys
- * MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment and Equipage; General Specification for

STANDARDS

FEDERAL

- * FED-STD-H28 - Screw-Thread Standards for Federal Services
- FED-STD-191 - Textile Test Methods

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- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
 - MIL-STD-129 - Marking for Shipment and Storage
 - * MIL-STD-147 - Palletized Unit Loads
 - * MIL-STD-731 - Quality of Wood Members for Containers and Pallets
- * (Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)
- * 2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

DRAWINGS

- * US ARMY NATICK RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER
- 4-1-173 - Fasteners, Snap; Style 1, Socket Assembly and Clinch Plate
 - 4-1-174 - Fasteners, Snap; Style 1, Studs and Washers
 - 4-1-176 - Fasteners, Snap; Style 2, Sheet No. 1
 - 4-1-177 - Fasteners, Snap; Style 2, Sheet No. 2
 - 4-1-178 - Fasteners, Snap; Style 2 and 2A, Stud-Eyelet Combination
 - 4-1-179 - Fasteners, Snap; Style 2A
 - 4-1-180 - Fasteners, Snap; Style 3, (17 lines)
 - 4-1-181 - Fasteners, Snap; Style 4, Construction A
 - 4-1-182 - Fasteners, Snap; Style 4, Construction B
 - 4-1-183 - Fasteners, Snap; Style 1B
 - 4-1-184 - Fasteners, Snap; Style 5
 - 4-1-185 - Fasteners, Snap; Style 6
 - 4-1-186 - Fasteners, Snap; Style 7

- * (Copies of drawings are available from the U.S. Army Natick Research, Development, and Engineering Center, Natick, MA 01760-5014.)
- * 2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

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AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 109 - Steel, Strip, Carbon, Cold-Rolled
- A 366 - Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality

- A 545 - Steel Wire, Carbon, Cold-Heading Quality for Machine Screws
- A 548 - Steel Wire, Carbon, Cold-Heading Quality, for Tapping or Sheet Metal Screws
- A 549 - Steel Wire, Carbon, Cold-Heading Quality for Wood Screws
- B 154 - Mercurous Nitrate Test for Copper and Copper Alloys
- * B 633 - Electrodeposited Coatings of Zinc on Iron and Steel
- * D 523 - Test for Specular Gloss
- * D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

- * (Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)
- * 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 shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

- * 3.1 Materials and components. Materials and components shall conform to the requirements specified herein. Materials and components not definitely specified shall be of the quality normally used by the manufacturer provided the completed item complies with all provisions of this specification. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.1.1 Brass. Sheet and strip brass shall conform to copper alloy Number 260 of QQ-B-613 or MIL-C-50 and shall be of the temper shown on applicable drawing. Brass rod shall conform to copper alloy Number 360, hex or round form, as applicable, of QQ-B-626 and shall be of the temper shown on applicable drawing.

3.1.2 Steel. Steel sheet, cold-rolled, commercial quality and steel strip, cold-rolled, temper 3, 4 or 5 shall conform to ASTM A 109 and A 366 respectively. Steel wire shall conform to grade 1008 through 1020 of ASTM A 545, A 548 and A 549, as applicable.

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3.1.3 Phosphor-bronze spring wire. Phosphor-bronze spring wire shall be round and conform to copper alloy 510 of QQ-W-321 and shall be of the temper shown on applicable drawing.

3.1.4 Fiber, reinforcement. Reinforcement fiber material shall be kraft paper consisting of 80 percent semibleached kraft and 20 percent bleached kraft fiber in accordance with the manufacturer's commercial practice.

3.2 Design and construction. The design and construction of the snap fasteners shall be as specified herein and as shown on the drawings listed in 2.1. Where rotation of a part of a snap fastener component would prevent effective functioning, or assembling to an end use article, that part of the snap fastener component shall be joined in a manner such that rotation will be prevented. Snap fasteners shall function as intended, when tested as specified in 4.3.1.

3.2.1 Springs. When the requiring agency has a special application requiring a "soft" or "hard" action fastener (see 6.2):

a. The dimensions of the inside diameter and gap of the springs, shown on the applicable drawing, shall not apply.

b. The spring shall be designed to meet the specific application requirement so that the socket assemblies will be firmly engaged when snapped on the appropriate studs and still permit disengagement or snapping off with a reasonable, properly applied force.

c. The contractor shall, upon request, be required to furnish the dimensions of the inside diameter and gap of the spring he proposes to furnish.

3.2.2 Threads. All machine screw threads shall conform to the applicable requirements of FED-STD-H28. Self-tapping screw threads shall be in accordance with FF-S-107 and wood screw threads in accordance with FF-S-111.

3.2.3 Fastener components. Unless otherwise specified (see 6.2), components necessary for complete fasteners shall be furnished and all components shall be of one manufacturer's construction only. When male or female halves of complete style 1, 1B, 2, and 2A fasteners only are specified, individual components shall be of one manufacturer's construction only.

3.2.3.1 Style 1 and 1B. Style 1 and 1B fasteners shall consist of a female half and a male half. The female half shall consist of two separate components and the male half shall consist of one component (or two, if washer is required).

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3.2.3.1.1 Female components, style 1 and 1B. The style 1 and 1B fastener female components shall consist of a spring action socket, regular or long pronged when applicable, as specified (see 6.2), and a clinch plate.

3.2.3.1.2 Male components, style 1. The style 1 male fastener component(s) shall be one of the following types and sizes, as specified (see 6.2):

- a. Stud, solid rivet base, size 1 or 2.
- b. Stud, two-crew base, size 1 or 2.
- c. Stud, eyelet base, size 1 or 2, with washer.
- d. Stud, machine screw base (No. 8-32UNC-2A), small hex, size 1, 2, 3, 4, 5, 6, 7, or 8.
- e. Stud, machine screw base (No. 10-32UNF-2A), small hex, size 1, 2, 3, 4, 5, 6, 7, or 8.
- f. Stud, machine screw base (No. 8-32UNC-2A), large hex, size 1, 2, 3, 4, 5, 6, 7, or 8.
- g. Stud, machine screw base (No. 10-32UNF-2A), large hex, size 1, 2, 3, 4, 5, 6, 7, or 8.
- h. Stud, self-tapping screw base (No. 8 gimlet point), size 1 or 2.
- i. Stud, self-tapping screw base (No. 10 gimlet point), size 1 or 2.
- j. Stud, self-tapping screw base (No. 10 blunt point), size 1, 2, 3, 4, 5, or 6.
- k. Stud, self-tapping screw base (No. 14 blunt point), size 1, 2, 3, 4, 5, or 6.
- l. Stud, wood screw base, size 1, 2, 3, or 4.
- m. Stud, two prong, clinch base, size 1 or 2, with washer.
- n. Stud, internal thread (shell constr.), size 1 or 2.
- o. Stud, internal thread (solid constr.), size 1 or 2.

3.2.3.1.3 Male components, style 1B. The style 1B male components shall consist of a stud, eyelet base, size 1, 2, or 3, with washer, as specified (see 6.2).

3.2.3.2 Style 2 and 2A. Unless otherwise specified (see 6.2), style 2 and 2A fasteners shall be either construction A, B, C, or D at the option of the contractor. Style 2 and 2A fasteners shall consist of two separate components that constitute the female half of the fastener and two separate components that constitute the male half of the fastener, except that where the application required a reversible fastener the stud-eyelet combination shall be furnished; in which case, the stud-eyelet combination shall constitute the male half of the fastener and the socket the female half.

3.2.3.2.1 Female components, style 2 and 2A. The style 2 and 2A female components shall be of the following buttons and sockets, as specified (see 6.2):

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Style 2

- a. Button, 24 line size, size 1 or 2.
- b. Button, 20 line size.
- c. Button, 30 line size.
- d. Button, 36 line size.
- e. Socket.

Style 2A

- a. Button, size 1 or 2.
- b. Socket.

3.2.3.2.2 Male components, style 2 and 2A. The style 2 and 2A male components shall be of the following stud and eyelet sizes or stud-eyelet combinations, as specified (see 6.2).

Style 2

- a. Stud.
- b. Eyelet, size 1, 2, or 3.
- c. Stud, machine screw machine base (No. 8-32UNC-2A), size 1, 2, 3, or 4.
- d. Stud, machine screw base (No. 10-32UNF-2A), size 1, 2, 3, or 4.
- e. Stud, wood screw base.
- f. Stud, self-tapping screw base, size 1 or 2.
- g. Stud, drive screw base.
- h. Stud, tubular rivet base (steel) with washer.
- i. Stud, tubular rivet base (brass) with washer.
- j. Stud-eyelet combination, size 1 or 2.
- k. Washer (for special applications when 36 line button is used).

Style 2A

- a. Stud.
- b. Eyelet, size 1, 2, 3, or 4.
- c. Stud-eyelet combination, size 1, 2, or 3.

3.2.3.3 Style 3. Unless otherwise specified (see 6.2), style 3 fasteners shall be either construction A, B, or C, at the option of the contractor. Style 3 fasteners shall consist of four separate components: pronged ring, socket, stud, and eyelet. The following construction A components shall be furnished only when specified (see 6.2): reinforced socket (in lieu of regular socket); reversible stud (for use with pronged ring). Unless otherwise specified (see 6.2), a 16-line size, style 3 snap fastener may be furnished in lieu of the 17-line construction shown on Drawing 4-1-180. The contractor shall, upon request, be required to furnish copies of drawings of the 16-line size fastener components he proposes to furnish.

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3.2.3.4 Style 4. Unless otherwise specified (see 6.2), style 4 fasteners shall be either construction A or B at the option of the contractor. Style 4 fasteners shall consist of four separate components: button, socket, stud, and eyelet or eyelet with threaded insert, as specified (see 6.2).

3.2.3.5 Style 5. Unless otherwise specified (see 6.2), style 5 fasteners shall be either construction A, B, or C at the option of the contractor. Style 5 fasteners shall consist of four separate components: button, size 1 or 2; socket; stud, or wide flange stud, eyelet, or wide flange eyelet, or long barrel eyelet, as specified (see 6.2).

3.2.3.6 Style 6. Unless otherwise specified (see 6.2), style 6 fasteners shall be either construction A or B at the option of the contractor. Style 6 fasteners shall consist of four separate components: button, small or large, as specified (see 6.2), and a socket, stud, and eyelet.

3.2.3.7 Style 7. Style 7 fasteners shall consist of two separate components: cap and post, small or large, as specified (see 6.2).

3.3 Stress corrosion cracking. Brass snap fastener components in the half-hard or harder temper shall be free from stress corrosion cracking when tested as specified in 4.3.2.

3.4 Finish. The finish, as specified (see 6.2), shall be in accordance with the applicable finish requirements specified and shall apply to all metal fastener parts, except:

a. At the option of the contractor, socket springs may have a natural finish or be finished to match the socket, provided such finishing does not adversely affect the function of the fastener.

b. At the option of the contractor, the following component parts of fasteners may have a natural finish.

<u>Component part</u>	<u>Applicable styles</u>
Stud eyelet	1, 1B (except 1B, size 3 alternates)
Button eyelet	2, 2A, 4
Button reinforcement (brass)	2
Threaded insert (brass)	4

c. Fastener components that are made of steel shall be zinc plated as specified in 3.5.

Finished snap fasteners shall be free from scratch, dig, abrasion exposing bare metal, and area of corrosion.

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3.4.1 Finish 1, bright brass. All component parts of the fasteners, except for the optional provisions specified in 3.4, shall be given a bright brass finish produced by a chemical or mechanical commercial finished process. Button cap shells may be given a coat of clear lacquer.

3.4.2 Finish 2, black.

3.4.2.1 Style 1, and 1B fasteners. The finish on the socket and the stud body shall be a dull black chemical finish in accordance with MIL-F-495. Glossiness of the head of the stud body due to polishing action in handling will be permissible. Other components of the fastener, except for the optional provisions specified in 3.4, shall be given a commercial dark oxide finish (see 6.3).

3.4.2.2 Style 2, 2A, 3, 4, 5, 6, and 7 fasteners. The black finish shall be a black chemical finish as specified in 3.4.2.2.1, except the button cap shells of style 2, 2A, 4, 6, and style 7 fasteners may, at the option of the contractor, be a black enamel finish as specified in 3.4.2.2.2.

3.4.2.2.1 Black chemical. The black chemical finish on the cap shells of buttons shall conform to MIL-F-495, except that the gloss shall be no more than 40. Other components of the fastener, except for the optional provisions specified in 3.4, shall be given a commercial dark oxide finish (see 6.3).

3.4.2.2.2 Black enamel. The black enamel finish on the button cap shells shall be a baked-on enamel. Prior to enameling, the shell shall be thoroughly cleaned and may be given preparatory prepaint treatments. The enamel shall be uniformly coated over the top surface of the shell including the visible portion of the edge (visible when attached to end use article.)

3.4.2.2.2.1 Gloss. The gloss of the enamel shall be no more than 40 when tested as specified in 4.3.3.

3.4.2.2.2.2 Resistance to hot soap solution. The enamel shall be unaffected, except for slight color change and slight dulling, and it shall not be possible to furrow through the film with the thumbnail, when tested for resistance to hot soap solution, as specified in 4.3.4.

3.4.2.2.2.3 Solvent resistance. The enamel shall be unaffected except for slight loss of gloss and there shall be no softening, when tested as specified in 4.3.5.

3.4.2.2.2.4 Enamel chipping. The enamel shall be capable of withstanding attachment operations without removal of any enamel, when tested as specified in 4.3.6.

3.4.2.2.2.5 Resistance to brittleness. The enamel shall be capable of being furrowed with a knife blade without evidence of brittleness, such as jagged furrow edges, when tested as specified in 4.3.7.

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3.4.2.2.2.6 Appearance. The enamel coating shall be smooth and free of sags, runs, and streaks.

3.4.3 Finish 3, nickel plate.

* 3.4.3.1 Style 1 fasteners. All component parts of the fasteners, except for the optional provisions specified in 3.4, shall be given a nickel plated finish conforming to class II of QQ-N-290, except the plating may be applied after forming and the thickness of the nickel plate shall be not less than 0.00005 inch.

* 3.4.3.2 Style 2, 2A, 3, 4, 5, 6, and 7 fasteners. All component parts of the fasteners, except for the optional provisions specified in 3.4, shall be given a nickel plated finish conforming to class II of QQ-N-290, except the plating may be applied after forming, and the thickness of the nickel plate shall be not less than 0.00002 inch.

3.4.4 Finish 4, bright chrome plate.

* 3.4.4.1 Style 1 fasteners. All component parts of the fasteners, except for the optional provisions specified in 3.4, shall be given a bright chrome plated finish conforming to class 1, type I of QQ-C-320. The nickel undercoat shall conform to class II of QQ-N-290 except the thickness of the nickel plate shall be not less than 0.0001 inch.

* 3.4.4.2 Style 2 and 2A fasteners. The button cap shell shall be given a bright chrome plated finish conforming to class 1, type I of QQ-C-320. The nickel undercoat shall conform to class II of QQ-N-290 except the thickness of the nickel plate shall be not less than 0.0001 inch. All other component parts, except for the optional provisions specified in 3.4, shall be given either a nickel plated finish as specified in 3.4.3.2 or a commercial dark oxide finish (see 6.3). When all components, except for the optional provisions specified in 3.4 are to be chrome plated as specified (see 6.2), the chrome plate finish requirements stated above for the button cap shell shall apply.

3.4.5 Finish 5, brown. The brown enamel finish on the button cap shell shall be a commercial baked-on enamel. Prior to enameling, the shell shall be thoroughly cleaned, and may be given preparatory prepaint treatments. The enamel shall be uniformly coated over the top surface of the shell including the visible portion of the edge (visible when attached to end use article.) The brown enamel finish shall conform to the requirements of 3.4.2.2.2.1 through 3.4.2.2.2.6. All other components, except for the optional provisions specified in 3.4, shall be given either a nickel plated finish specified in 3.4.3.2 or a commercial dark oxide finish (see 6.3).

* 3.5 Protective treatment. Zinc plating shall conform to type II, SCI of ASTM B 633.

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3.6 Assembling to end use article data. When specified (see 6.2), the contractor shall furnish data for attaching snap fasteners to end use articles. Assembling data shall include the manufacturer's recommendations for attaching the attaching tool (e.g. chuck, hand punch, die, hand screw driver or special equipment).

3.7 Marking for identification. At least one component part of each complete fastener shall bear the manufacturer's identification either by name, trade name, or trademark. Identification markings shall be permanent and shall not affect the working or snapping on and off characteristics of the fastener.

- * 3.8 Workmanship. The finished fasteners shall be clean and free from oil, grease, dirt, sharp edges, burrs, puncture, malformation, deformation, and fracture. The fasteners shall conform to the quality of product established by this specification and the occurrence of defects shall not exceed the applicable acceptable quality levels.

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 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 set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.
- * 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 the 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 defective material, either indicated or actual, nor does it commit the Government to accept defective 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 assure compliance with all dimensional requirements.

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4.2 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with MIL-STD-105.

- * 4.2.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.
- * 4.2.2 In-process inspection. Inspection of subassemblies shall be made to ascertain that construction details which cannot be examined in the finished product are in accordance with specified requirements. The Government reserves the right to exclude from consideration for acceptance, any material or service for which in-process inspection has indicated nonconformance.
 - a. Cleaning of button cap shells prior to enameling (when applicable) is in conformance to 3.4.2.2.2 and 3.4.5.
 - b. Nickel undercoating prior to chrome plating (when applicable) is in conformance to 3.4.4.1 and 3.4.4.2.
- * 4.2.3 End item visual examination. The end items shall be examined for defects listed in table I. The lot size shall be expressed in units of snap fasteners. The sample unit shall be one snap fastener. The inspection level shall be S-4 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 6.5 for total (major and minor combined) defects.

TABLE I. End item visual defects

Examine	Defect	Classification	
		Major	Minor
Finish	Not finished	101	
	Color or finish is not as specified, unless excepted; such as glossiness of head of stud body		201
	Scratch, dig, or abrasion exposing bare metal		202
	Area of corrosion		203
	Enamel coating not uniform over the top and visible portion of the edge of the shell of the button cap		204
	Enamel coating has sags, runs, or streaks, or is not smooth		205

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TABLE I. End item visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Design, construction and workmanship, general (applicable to all components and assemblies)	Any component missing	102	
	Any component not fabricated of the applicable referenced materials	103	
	Not fabricated as specified	104	
	Not clean i.e., evidence of oil, grease, or dirt		206
	Sharp edge or burr		207
	Puncture, malformation, deformation, or fracture	105	
Assembling data	Missing, as applicable	106	
	Incomplete or illegible		208
Marking (identification)	Missing, incomplete, illegible, misspelled, or incorrect		209
	Not permanent		210

* 4.2.4 End item dimensional examination. The end items shall be examined for conformance to the dimensions specified on the drawings that can be determined on the end item without damaging or disassembling the end items. Any dimensions not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of snap fasteners. The sample unit shall be one snap fastener. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 1.5.

* 4.2.5 End item testing. The end items shall be tested for the characteristics listed in table II. The methods of testing specified in FED-STD-191 wherever applicable and as listed in table II shall be followed. The lot size shall be expressed in units of snap fasteners. The sample unit shall be 7 snap fasteners. The inspection level shall be S-2. Any test failure shall be cause for rejection of the lot.

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TABLE II. End item testing

Characteristic	Requirement reference	Test method paragraph	No. determinations per sample unit	Results reported as
Functioning of assembled fastener	3.2	4.3.1	1	Pass or fail
Resistance to stress corrosion cracking	3.3	4.3.2	1	Pass or fail
Enamel finish:				
Gloss	3.4.2.2.2.1	4.3.3	1	Pass or fail
Resistance to hot soap solution	3.4.2.2.2.2	4.3.4	1	Pass or fail
Solvent resistance	3.4.2.2.2.3	4.3.5	1	Pass or fail
Resistance to enamel chipping	3.4.2.2.2.4	4.3.6	1	Pass or fail
Resistance to brittleness	3.4.2.2.2.5	4.3.7	1	Pass or fail

- * 4.2.6 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 2.5.

ExamineDefect

Marking (exterior and interior)

Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.

Materials

Any component missing, damaged, or not as specified.

Workmanship

Inadequate application of components, such as: incomplete sealing or closure of flap, improper taping, loose strapping or inadequate stapling.
 Bulged or distorted container.

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Content Number per container is more or less than required.

- * 4.2.7 Palletization examination. The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1, and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirements
Palletization	Pallet pattern not as specified Interlocking of loads not as specified Load not bonded with required straps as specified
Weight	Exceeds maximum load limits
Marking	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application

4.3 Methods of inspection.

- * 4.3.1 Function test. The male and female half of the fastener shall each be assembled to a suitable fabric or material in accordance with the contractor's recommendations for assembling (see 3.6). Determine whether rotation, if any, of any part prevents effective assembly or functioning when tested as specified herein. After assembly, the male and female halves of the fastener shall be visually inspected. Any cracks in the rolled eyelet portion of the male or female halves of the fastener shall constitute a test failure. The male and female half shall be manually snapped together and shall snap and unsnap at the point or periphery normally used when opening and closing. The fastener shall be manually operated as stated not less than four times to determine compliance with 3.2. Any sample not snapping or unsnapping shall constitute failure of this test.

4.3.2 Stress corrosion cracking test. The brass snap fastener components in the half-hard or harder temper shall be tested for stress corrosion cracking in accordance with ASTM B 154. Any sample having evidence of stress corrosion cracking shall constitute failure of this test.

- * 4.3.3 Enamel gloss test. The enamel gloss of the button cap shell shall be tested by visually comparing against a black or brown, as applicable, enamel plain panel whose gloss has been determined to be 40 in accordance with ASTM D 523. Any button cap shell having a gloss greater than 40 shall constitute failure of this test.

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4.3.4 Enamel resistance to hot soap solution test. The resistance of the enamel on the button shall be tested by immersing the button in a 5-percent soap solution maintained at $195^{\circ}\text{F} \pm 5^{\circ}$, for a period of not less than 2 hours. The soap shall conform to P-S-1792. After immersion, the button shall be rinsed and the enamel on the cap shell examined for differences in appearance from the unimmersed control specimen. An attempt shall be made to furrow through the enamel film with the thumbnail. Any difference in enamel film appearance, except for slight color change or slight dulling, or any enamel film having evidence of thumbnail furrow through the film shall constitute failure of this test.

4.3.5 Enamel resistance to solvent test. The resistance of the enamel on the button to a solvent shall be tested by immersing the button in Stoddard's solvent maintained at $70^{\circ} \pm 5^{\circ}\text{F}$, for a period of not less than 20 minutes. After immersion, the button shall be dried and the enamel cap shell surface examined visually for changes in appearance from an unimmersed control specimen. An attempt shall be made to scrape the enamel film with the thumbnail. Any difference in enamel film appearance, except for slight loss of gloss, or any enamel film having evidence of softening due to scraping with the thumbnail shall constitute failure of this test.

4.3.6 Enamel chipping test. The resistance of the enamel on the button to withstand attachment operations shall be tested by attaching a button and applicable socket to a suitable fabric using the contractor's recommended attaching device. After attachment, the enameled surface of the button shall be examined visually. Any evidence of removal of enamel due to attachment operations shall constitute failure of this test.

4.3.7 Enamel resistance to brittleness test. The resistance of the enamel on the button to brittleness shall be tested by holding a knife blade at 30° from the horizontal and drawing it across the enameled surface making a furrow. The edges of the furrow shall be examined visually. Any evidence of jagged furrow edges shall constitute failure of this test.

5. PACKAGING

5.1 Preservation. Preservation shall be level A or Commercial as specified (see 6.2).

5.1.1 Level A. Like component parts of the male half or female half snap fasteners of one style and finish only shall be packed in commercial quantities, not to exceed 2,500 pieces, in a snug-fitting paperboard box conforming to PPP-B-566, PPP-B-665, or PPP-B-676. Each box shall be agitated during filling from time to time. Closure of each box shall be effected with minimum 1-inch width tape conforming to type III, class 2, grade B of PPP-T-45. The tape shall be applied in such a manner as to most advantageously seal the closure.

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- * 5.1.2 Commercial. Like component parts of male half or female half snap fasteners of one style and finish only, shall be preserved in accordance with ASTM D 3951.

5.2 Packing. Packing shall be level A, B, or Commercial as specified (see 6.2).

5.2.1 Level A packing. Forty or fifty thousand like component parts of male half or female half snap fasteners of one style and finish only, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style FTC-L, grade V2s of PPP-B-636, except that the weight limitation shall be waived. Each shipping container shall be fitted with a one-piece taped liner conforming to PPP-B-636 except liner material shall be grade V3c. Each shipping container shall be closed and reinforced with strapping or tape banding in accordance with the appendix of PPP-B-636. Boxes shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.2). Strapping shall be limited to nonmetallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Forty or fifty thousand like component parts of male half or female half snap fasteners of one style and finish only, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to style FTC-L, type CF, class domestic, variety DW, grade 350 of PPP-B-636. Each shipping container shall be fitted with a taped, one-piece liner conforming to type CF, class domestic, variety SW, grade 275 of PPP-B-636 and reinforced with strapping or tape banding in accordance with the appendix thereto.

5.2.2.1 Weather-resistant fiberboard container. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with the appendix thereto.

- * 5.2.3 Commercial packing. Like component parts of the male half or female half snap fasteners, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.
- * 5.3 Palletization. When specified (see 6.2), snaps packed as specified in 5.2.2 and 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet types shall be type I (4-way entry), type IV or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means K and L or film bonding means O or P. Pallet pattern shall be in accordance with appendix of MIL-STD-147.

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- * **5.4 Marking.** In addition to any special marking required by the contract or purchase order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable. In addition to the marking specified therein, each interior and exterior container shall be marked with the name of the mating component part as follows:

TO BE USED WITH.....of male half
 TO BE USED WITH.....of female half

6. NOTES

- * (This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The snap fasteners are intended to be used on clothing, tentage, equipage, and leather items.

- * 6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification.
- b. Style and finish of snap fastener (see 1.2 and 3.4).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. Application (end use article data on which fastener is to be used), if application requires other than regular spring action (e.g. "soft" or "hard" action is required) (see 3.2.1).
- e. Whether complete fastener or half fastener (male or female half of fastener), or individual fastener part is required (see 3.2.3).
- f. Whether 16-line size, style 3 fastener will not be acceptable in lieu of 17-line size (see 3.2.3.3).
- g. Specific construction required if construction is not to be at the contractor's option:
 1. Style 2 and 2A, construction A, B, C, or D (see 3.2.3.2).
 2. Style 3, construction A, B, or C (see 3.2.3.3).
 3. Style 4, construction A or B (see 3.2.3.4).
 4. Style 5, construction A, B, or C (see 3.2.3.5).
 5. Style 6, construction A or B (see 3.2.3.6).
- h. Component(s) and size(s) of fastener components required (as applicable).
 1. Style 1 and 1B female components (see 3.2.3.1.1).
 2. Style 1 male components (see 3.2.3.1.2).
 3. Style 1B male components (see 3.2.3.1.3).
 4. Style 2 and 2A female components (see 3.2.3.2.1).
 5. Style 2 and 2A male components (see 3.2.3.2.2).
 6. Style 3 components (see 3.2.3.3).
 7. Style 4 components (see 3.2.3.4).
 8. Style 5 components (see 3.2.3.5).

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9. Style 6 components (see 3.2.3.6).

10. Style 7 components (see 3.2.3.7).

i. When all components of style 2 and 2A fasteners, except for optional provisions, are to be chrome plated (see 3.4.4.2).

j. When assembling data is required (see 3.6).

k. Levels of preservation and packing (see 5.1 and 5.2).

* l. Type and class of unit load required (see 5.2.1).

m. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).

* n. When palletization is required (see 5.3).

6.3 Color, commercial dark. Commercial dark color is a nominally dark color, approaching black, but with permissible latitude as to shade and tone (e.g. bronze-tone black, blue tone black, and dark gray).

6.4 Styles, drawings, and military standards. The styles with applicable drawings and comparable military standards are listed as follows:

Style	Drawing	Military standard
1	4-1-173 and 4-1-174	MS27977
1B	4-1-183	MS27979
2	4-1-176, 4-1-177 and 4-1-178	MS27980
2A	4-1-178 and 4-1-179	MS27981
3	4-1-180	MS27982
4	4-1-181 and 4-1-182	MS27983
5	4-1-184	MS27984
6	4-1-185	MS27985
7	4-1-186	MS27986

6.5 Style 1A. Style 1A was deleted as it was no longer required.

* 6.6 Subject term (key word) listing.

Catch
Clasp
Hook
Join
Lock
Secure

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- * 6.7 Changes from previous issue. The margins of this document are marked with an asterisk (*) to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content, irrespective of the marginal notations and relationship to the previous issue.

Custodians:

Army - GL
Navy - AS
Air Force - 99

Preparing activity:

Army - GL
(Project 5325-0285)

Review activities:

- * Army - AR, MI
Navy - OS
* Air Force - 82
DSA - IS

User activities:

Army - AV, ME

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL*(See Instructions - Reverse Side)***1. DOCUMENT NUMBER**

MIL-F-10884F

2. DOCUMENT TITLE

FASTENERS, SNAP

3a. NAME OF SUBMITTING ORGANIZATION**4. TYPE OF ORGANIZATION (Mark one)**☐

VENDOR

☐

USER

☐

MANUFACTURER

☐

OTHER (Specify): _____

b. ADDRESS (Street, City, State, ZIP Code)**5. PROBLEM AREAS****a. Paragraph Number and Wording:****b. Recommended Wording:****c. Reason/Rationale for Recommendation:****6. REMARKS****7a. NAME OF SUBMITTER (Last, First, MI) - Optional****b. WORK TELEPHONE NUMBER (Include Area Code) - Optional****c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional****8. DATE OF SUBMISSION (YYMMDD)**

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