

MIL-F-43573A (GL)
28 June 1968
SUPERSEDING
MIL-F-43573 (GL)
29 February 1968

MILITARY SPECIFICATION

FASTENERS, SNAP, PLASTIC

1. SCOPE

1.1 Scope.- This specification covers requirements for two types of plastic snap fasteners (see 6.1).

1.2 Classification.- Snap fasteners shall be of the following types, as specified (see 6.2).

Type I - Two-piece snap fastener (stud-eyelet and socket).

Type II - Four-piece snap fastener (stud and eyelet and socket and eyelet).

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

FEDERAL

L-P-392 - Plastic Molding Material, Acetal, Injection and Extrusion.

MILITARY

MIL-H-3982 - Hardware (Fasteners and Related Items) Packaging and Packing for Shipment and Storage Of.

MIL-P-22748 - Plastic, Polyethylene and Copolymers, High Density, Molding and Extrusion Material.

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

FSC 5325

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DRAWINGS

U. S. ARMY NATICK LABORATORIES

- 8-2-191 - Fasteners, Snap Plastic, Assembly and Details (Type II).
- 8-2-261 - Fasteners, Snap Plastic, Assembly and Details (Type I).

(Copies of specifications, standards, drawings and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer).

3. REQUIREMENTS

3.1 First article.- When specified (see 6.2), before quantity production is commenced, finished samples of the components necessary to assemble six complete fasteners shall be submitted or made ready for approval of the contracting officer or his authorized representative for inspection as specified in 4.2 to determine compliance with this specification. The approval of the preproduction sample authorizes the commencement of production but does not relieve the supplier of responsibility for compliance with all applicable provisions of this specification.

3.2 Materials.-

3.2.1 Molding compound.-

3.2.1.1 Polyethylene material.- The compound used in molding the stud and socket portion of the type II snap fastener shall be a virgin high density polyethylene conforming to class C, grade 2 of MIL-P-22748 except that the requirements for thermal stress cracking resistance, dielectric constant and dissipation factor shall not apply. Clean, unburned plastic material in the form of imperfect parts, sprues, runners or other scraps of the same composition, produced in the molding or finishing operation may be reground and mixed with the virgin material.

3.2.1.2 Acetal material.- The compound used in molding the stud-eyelet and socket portion of the type I snap fastener or the eyelet of the type II snap fastener shall be a virgin acetal molding material conforming to type I, class 2 of L-P-392, except that the electrical property requirements shall not apply. Clean, unburned plastic material in the form of imperfect parts, sprues, runners or other scraps of the same composition, produced in the molding or finishing operation may be reground and mixed with the virgin material.

3.3 Design and construction.-

3.3.1 Design.- The type I snap fastener shall consist of a female portion (socket) and a male portion (stud-eyelet). The type II snap fastener shall consist of a female portion (eyelet and socket) and a male portion

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(eyelet and stud). Unless otherwise specified (see 6.2), components for complete fasteners shall be furnished and all components shall be of one manufacturer's construction only.

3.3.2 Construction.- The snap fastener shall be made as specified herein and in accordance with the details in Drawings 8-2-261 or 8-2-191, (as applicable).

3.4 Performance.-

3.4.1 Strength of setting pinch or clinch.- The type I fastener (stud-eyelet and socket), when assembled or clinched together shall not separate when subjected to a minimum pull strength of 50 pounds when tested as specified in 4.3.3. The type II fastener (eyelet and socket and eyelet and stud) when assembled or clinched together shall not separate when subjected to a minimum pull strength of 35 pounds when tested as specified in 4.3.3.

3.4.2 Function.- The snap fastener shall function as intended when tested as specified in 4.3.3.

3.5 Instructions for use.- The supplier shall furnish data for attaching snap fasteners to end use articles. Assembly data shall include the manufacturer's recommendation for attaching the snap fasteners as well as tools required for attaching the snap fastener, (e. g. chuck, hand punch, die, or special equipment).

3.6 Marking for identification.- At least one component part (socket, stud-eyelet, or stud) of each complete fastener shall bear the manufacturer's identification either by name, trade name, or trade mark. Identification marking shall be permanent and shall not affect the working or snapping on and off characteristics of the fastener. The size of the letter shall be approximately 1/16 inch high. The marking shall be accomplished by a molded-in process and the characters shall be raised approximately 0.007 inch.

3.7 Workmanship.- The components shall be clean, smooth and free from cracks, dirt or flash and shall conform to the established quality provisions of this specification and the occurrence of defects shall not exceed the applicable acceptable quality levels (AQLs) in Section 4.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.- Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.1.1 Certificate of compliance.- Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 First article inspection.- When specified (see 6.2), samples submitted in accordance with 3.1 shall be inspected for all provisions of this specification applicable to end product examination and tests.

4.3 Inspection.- Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated hereinafter.

4.3.1 Component and material inspection.- In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase documents. The composition of the polyethylene or acetal molding material specified in 3.2.1.1 and 3.2.1.2 may be accepted on the basis of the supplier's certificate of compliance.

4.3.2 Inspection of the end item.-

4.3.2.1 Visual examination.- Examination of the end item shall be in accordance with the defects and acceptable quality levels (AQLs) set forth in 4.3.2.3. For purposes of sampling, all snap fasteners of the same type and composition, offered for inspection at one time shall be considered a lot. The sample unit shall be one complete snap fastener.

<u>Examine</u>	<u>Defect</u>
Design and construction	Not as specified.
Marking	Missing. Not as specified.
Workmanship	Not clean. Not smooth. Cracked. Contains dirt. Contains flash.
Assembly data and attaching tools	Missing, incomplete or not as specified.

4.3.2.2 Dimensional examination.- Inspection shall be made of snap fasteners to determine compliance with dimensions of snap fasteners specified. Any dimension not within specified tolerances shall be classified as a defect.

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4.3.2.3 Inspection levels and acceptable quality levels (AQLs) for examination.- The inspection levels for determining sample size and the acceptable quality levels (AQLs) expressed in defects per 100 units shall be as follows:

<u>Examination paragraph</u>	<u>Inspection level</u>	<u>AQL</u>
4.3.2.1	S-1	1.5
4.3.2.2	S-2	4.0

4.3.3 Testing of the end item.- The completely fabricated snap fastener parts shall be tested for the characteristics listed in table I. The test requirements shall be applicable to the individual unit. For purposes of sampling, all snap fasteners offered for inspection at one time shall constitute a lot. The sample unit shall be two completely fabricated snap fasteners. The sample size shall be ten. There shall be no evidence of failure of any sample unit to meet the requirement specified.

TABLE I.- End item testing

<u>Characteristic</u>	<u>Require- ment paragraph</u>	<u>Test method</u>	<u>Number deter- minations per sample unit</u>	<u>Results reported as</u>
Strength of setting	3.4.1	4.4.1	1	Pass or fail
Function of assembled fastener	3.4.2	4.4.2	4	Pass or fail

4.3.4 Examination of Preparation for delivery requirements.- An examination shall be made in accordance with the provisions of MIL-H-3982 to determine compliance with the packing, packaging and marking requirements of Section 5 of this specification.

4.4 Tests.-

4.4.1 Determination of Strength of Setting Pinch (Clinch).-

4.4.1.1 For Type I fasteners (between stud-eyelet and socket).- The stud-eyelet and socket shall be attached to two pieces of brass strip stock (each strip 0.010 inch thick) as shown in figure 1. The brass strips shall be pre-punched before assembling the two parts. Both ends of the brass strips shall be clamped in separate jaws of a tensile testing machine. Distance between the jaws shall be 4 inches. The speed of jaw separation shall be 12 inches per minute. Determinations shall be made for compliance to 3.4.1.

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4.4.1.2 For Type II fasteners (between eyelet and stud and eyelet and socket).- The eyelet and stud (male half) and eyelet and socket (female half) shall each be attached to two 6-inch pieces of fabric as shown in figure 2. The fabric shall be pre-punched before assembling the snaps. Both ends of each piece of fabric per combination shall be clamped in separate jaws of tensile testing machine. The distance between jaws shall be 4 inches. The speed of jaw separation shall be 12 inches per minute. The thickness of the fabric used in the test shall be between .020 and .035 inch. Determination shall be made for compliance to 3.4.1.

4.4.2 Function test.- The male and female half of the fastener under test shall each be assembled to the fabric to be used in accordance with the manufacturer's recommendation for assembling. The male and female half shall be manually snapped together and shall readily 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 4 times to determine compliance with 3.4.2.

5. PREPARATION FOR DELIVERY

5.1 Packaging.- Packaging shall be level A or C as specified (see 6.2).

5.1.1 Levels A and C.- Fasteners shall be packaged in accordance with the applicable requirements of MIL-H-3982.

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

5.2.1 Levels A, B, and C.- Fasteners shall be packed in accordance with MIL-H-3982.

5.3 Marking.- In addition to any special marking required by the contract or order, shipment shall be marked in accordance with MIL-H-3982.

6. NOTES

6.1 Intended use.- The type I snap fasteners are intended for use on ponchos and shelter halves. The compressed thickness of foundation or fabric which can be used with these fasteners should not be less than 0.010 inch or more than 0.030 inch. If consideration is given to a fabric thickness outside the above range it should be thoroughly evaluated with this snap fastener design before adoption. The type II snap fasteners are intended for use on equipment items such as entrenching tool covers, tropical rucksack carriers, grenade cases and small arms ammunition cases. The compressed thickness of foundation or fabric which can be used with these fasteners should not be less than 0.030 inch or more than 0.156 inch. In the smaller thicknesses, only nylon fabric is recommended with this snap fastener. If consideration is given to a fabric thickness outside the above range it should be thoroughly evaluated with this snap fastener design before adoption.

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6.2 Ordering data.- Procurement documents should specify the following:

- a. Title, number and date of this specification.
- b. Type fastener required (see 1.2).
- c. First article.- When preproduction sample is required (see 3.1).
- d. Whether separate fastener component parts are required or whether fastener components from different manufacturers are required (see 3.3.1).
- e. Selection of applicable levels of packaging and packing (see 5.1.1 and 5.2.1).

Custodian:

Army - GL

Review activities:

Army - GL, ME

User activities:

Army - AT, EL, MI, MU

Preparing activity:

Army - GL

Project No. 5325-A001

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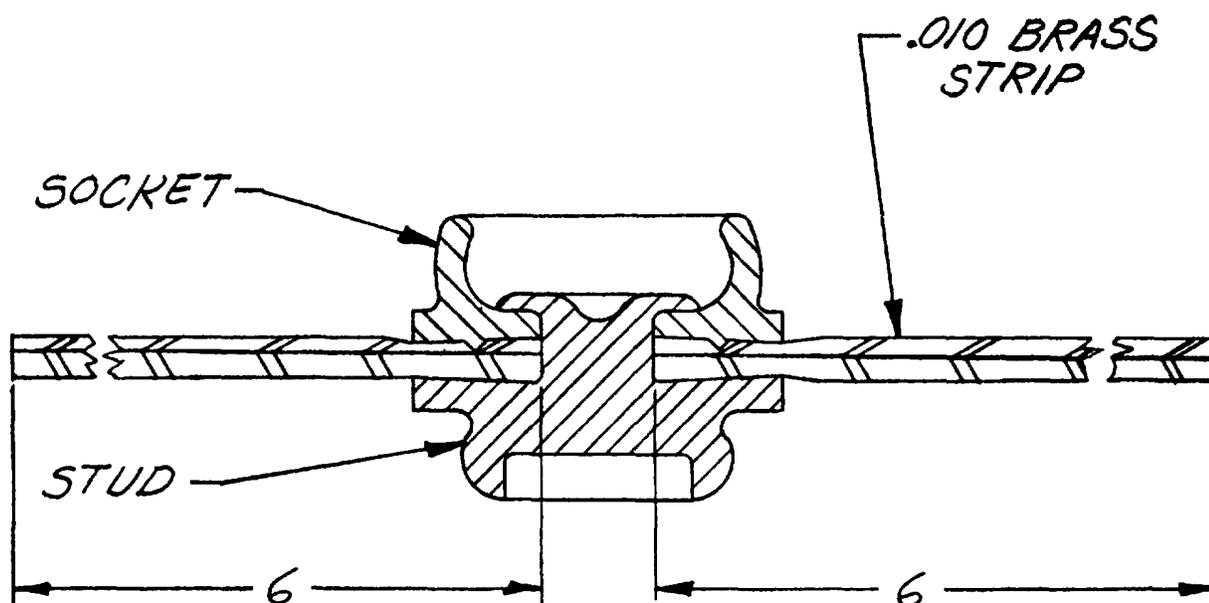


FIGURE 1
ASSEMBLIES FOR PULL TEST
FOR TYPE I FASTENER
SCALE 4/1

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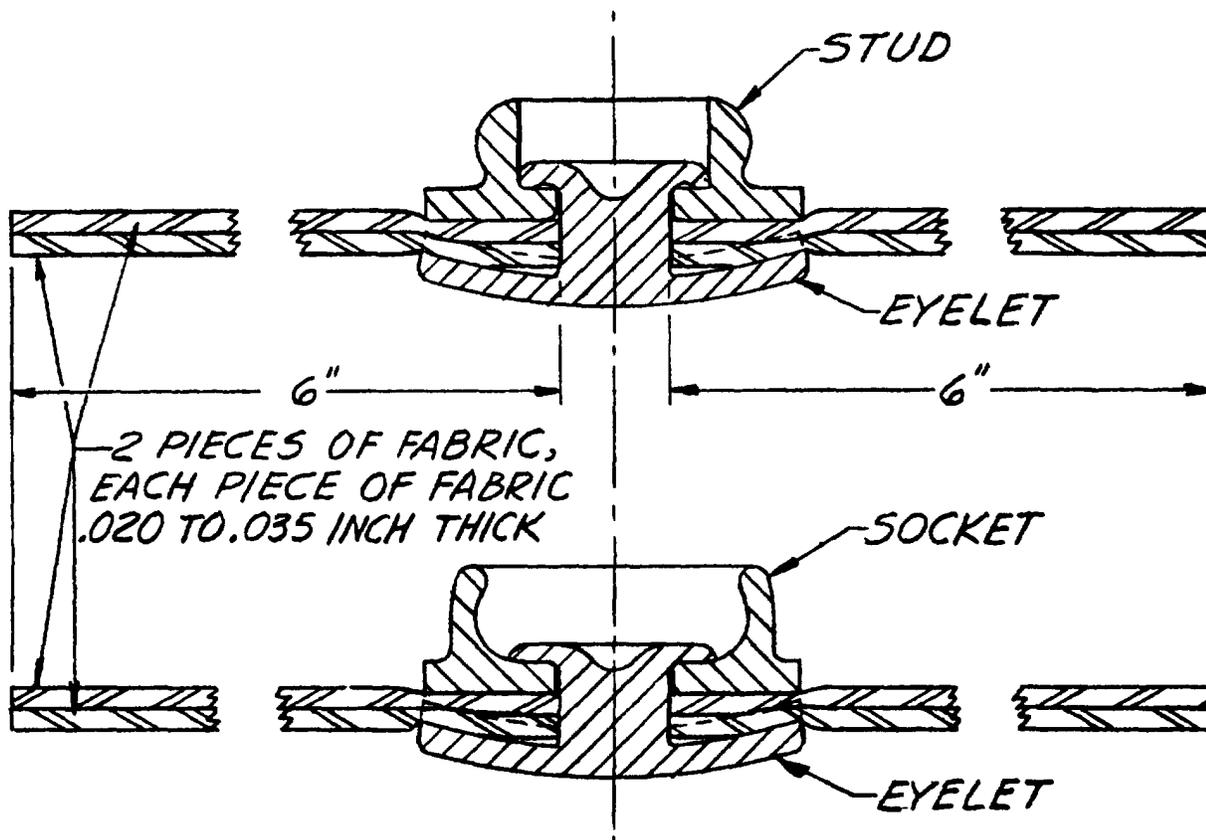


FIGURE 2

ASSEMBLIES FOR PULL TEST
FOR TYPE II FASTENERS

SCALE: 4/1

"to detach this form, cut along this line"

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
INSTRUCTIONS		
This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity.		
SPECIFICATION		
Fasteners, Snap, Plastic - MIL-F-43573A(GL)		
ORGANIZATION		CITY AND STATE
CONTRACT NO	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT
		\$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

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