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19 October 1988
SUPERSEDING
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MILITARY SPECIFICATION

BUTTON, INSIGNIA (ANCHOR, PLASTIC, BLACK)

This specification is approved for use by the Navy Clothing and Textile Research Facility, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for plastic molded sewing hole type buttons.

1.2 Classification. The buttons shall be of one type only and shall be procured in the following classes:

Class 1 - 25 line

Class 2 - 50 line

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).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Officer in Charge, Navy Clothing and Textile Research Facility, 21 Strathmore Road, Natick, MA 01760-2490 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

FSC 8455

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SPECIFICATIONS

FEDERAL

- NN-P-71 - Pallet, Material Handling, Wood, Stringer Construction, 2 Way and 4 Way (Partial)
- PPP-B-566 - Boxes, Folding, Paperboard
- PPP-B-665 - Boxes, Paperboard, Metal Edged and Components
- PPP-B-676 - Boxes, Setup

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- MIL-P-15011 - Pallet, Material Handling, Wood, Post Construction, 4 Way Entry
- MIL-B-17757 - Boxes, Shipping, Fiberboard (Modular Sizes).

STANDARDS

MILITARY

- 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

(Copies of the Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. Others must request copies of FIPS from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161-2171.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation (see 6.2).

LAWS AND REGULATIONS

U.S. POSTAL SERVICE MANUAL

(Copies of the manual may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-0001)

2.2 Non-Government. The following document(s) form a part of this specification to the extent specified herein. Unless otherwise specified, the issue of documents which are DOD adopted shall be those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the documents cited in the solicitation.

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NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC., AGENT

National Motor Freight Classification

(Applications for copies should be addressed to the American Trucking Association, ATTN: Traffic Department, 1616 P Street, N.W., Washington, DC 20036-1404).

UNIFORM CLASSIFICATION COMMITTEE, AGENT

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, Illinois 60606-5808).

THE COLOR ASSOCIATION OF THE UNITED STATES

Department of Defense Standard Shades for Buttons

(Application for copies of color cards should be addressed to the Color Association of the U.S., 343 Lexington Avenue, New York, NY 10016).

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated detail specifications, specification sheets, or MS standards), 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 Guide sample. Samples, when furnished, are solely for guidance and information to the contractor (see 6.3). Variations from this specification may appear in the sample in which case this specification shall govern.

3.2 First article. When specified, the contractor shall furnish sample unit(s) for first article inspection and approval (see 4.3 and 6.2).

3.3 Material.

3.3.1 Molding compound. The molding plastic material used for producing the specified buttons, shall be of a melamine formaldehyde compound of a quality suitable to meet the requirements specified herein (see 4.4.1).

3.4 Color and Finish. The buttons shall match DOD Button Shade Black BT, cable No. 62001, cited in the Department of Defense Standard for Button Shades (see 2.2), and shall have a glossy finish. The sewing holes shall be clean of excess flash and other workmanship defects.

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3.5 Performance requirements

3.5.1 Resistance to chalking. The finished buttons shall show no perceptible evidence of chalking or more than a slight loss of luster when tested as specified in 4.5.

3.5.2 Compressive strength. The minimum compressive strength of the finished buttons shall be 400 pounds when tested as specified in 4.5.

3.6 Design. The buttons shall be a four hole sewing type, conforming to the design as shown in Figure 1. The anchor for the buttons shall be countersunk on the face of the buttons.

3.6.1 Finished dimensions. The finished dimensions of the buttons shall be as shown on Figure 1.

3.7 Workmanship. The finished buttons shall conform to the quality established by this specification. 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 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 must 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 acceptance of defective material.

4.1.2 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 Classification of inspection. The inspection requirements specified herein are classified as follows:

1. First article inspection (see 4.3).
2. Quality conformance inspection (see 4.4).

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4.3 First article inspection. When required, the first article submitted in accordance with 3.2, shall be inspected as specified in 4.4.2 for compliance with design, construction, workmanship, appearance and dimensional requirements.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with MIL-STD-105, except where otherwise indicated.

4.4.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable procurement documents. In addition, the contractor shall furnish a certificate of compliance for the molding compound requirements (see 3.3.1).

4.4.2 Examination of the end item. Examination of the end item shall be in accordance with 4.4.2.1 through 4.4.2.2. The applicable inspection levels and acceptable quality levels (AQL's) shall be as indicated in 4.4.2.3. The lot size shall be expressed in units of gross of buttons. The sample unit shall be one finished button.

4.4.2.1 Visual examination. The buttons shall be examined for defects in color, design, material, workmanship, and marking in accordance with the list below:

| Examine | Defects |
|------------------|--|
| Design | Varies from design of approved sample. Anchor design not countersunk on face of button. Anchor design not centered on button. Other than four holes. |
| Color and Finish | Color other than specified, i.e., does not match the specified shade. Not a glossy finish throughout. Mottled, stained spotted, or not clean. Pitted, porous, or any rough surface. |
| Workmanship | Nicked, gouged, chipped, cracked, scratched, dented, disfigured, or malformed. Any fin, sharp edge, chip, flash, or evidence of foreign matter on top and bottom surfaces, around periphery, or in any sewing hole. Holes not uniformly spaced. Any hole not in specified location. Warped, twisted, or distorted. |

4.4.2.2 Dimensional Examination. Any measurement deviating from nominal dimensions and tolerances specified on Figure 1, shall be scored as a defect.

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4.4.2.3 Inspection levels and acceptable quality levels (AQL's). The inspection levels and acceptable quality levels, expressed in defects per 100 units for visual and dimensional examination, shall be as follows:

| | Inspection level | AQL's |
|-----------------------------------|------------------|-------|
| For defects applicable to 4.4.2.1 | I | 4.0 |
| For defects applicable to 4.4.2.2 | S-1 | 4.0 |

4.4.3 Examination of packaging requirements. An examination shall be made to determine that packaging, packing and marking complies with Section 5 requirements of this specification. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. 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 acceptable quality level shall be 2.5 defects per hundred units.

ExamineDefects

Marking (interior and exterior)

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

Material

Any component missing, damaged or not as specified.

Workmanship

Inadequate application of components, such as: incomplete closure of container flaps, improper taping, loose strapping, inadequate stapling. Distorted or bulging containers.

Content

Number of buttons per unit package is more or less than specified. 1/
Number of unit packages per shipping container is more or less than specified.

1/ For this defect, one unit package shall be examined from each shipping container in the sample.

4.5 Testing of the end item. The end item shall be tested for the characteristics specified in Table I. The minimum performance requirement specified in Section 3 apply to the average of the determinations made on a sample unit for test purposes as specified in the applicable test method. All test reports shall contain the individual values utilized in expressing the final results. The lot size shall be expressed in units of one gross of buttons. The sample unit shall be one dozen (12) buttons. The sample size shall be as follows:

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| <u>Lot size (gross)</u> | <u>Sample size (dozen)</u> |
|--------------------------------|----------------------------|
| 800 or less | 2 |
| 801 up to and including 22,000 | 3 |
| 22,001 and over | 5 |

The lot shall be unacceptable if one or more sample units fail to meet any of the test requirements specified.

Table I
End Item Tests

| Characteristic | Require- ment para- graph | Test method | Requirements applicable to | | Number of determin- tions per sample unit | Results reported as | |
|---------------------------|------------------------------------|----------------|----------------------------------|---------------------|---|------------------------|------------------------------|
| | | | Sam- ple unit | Lot aver- age | | Pass or Fail | Numerically to nearest |
| Resistance to chalking | 3.5.1 | 4.5.1 | X | - | 1 | X | - |
| Compressive strength | 3.5.2 | 4.5.2 | - | X | 5 | - | pound |

4.5.1 Resistance to chalking. The button shall be immersed in a boiling solution of 0.8 percent by weight of sulfuric acid for ten minutes, immediately wiped dry and examined for chalking. Chalking is evidenced by a dry, chalk like appearance or deposit on the surface of the button. Determination shall be made by holding the button at arm's length and examining it under a strong white light.

4.5.2 Compressive strength. Compressive strength of the buttons shall be conducted using apparatus which permits gradual application of the load either by a manual or automatic hydraulic mechanism. The load indicating mechanism (gauge), shall be capable of showing the total compressive load carried by the button; however, the gauge shall be so calibrated that the load deflection at the point of button failure is at least one-third of the total capacity of the gauge. Buttons shall be placed face down one at a time, between flat blocks of steel, and tested to failure. Failure is defined as the first sign of a crack in the button visible to the naked eye (a visible crack in the button will usually be found at the first audible sound of cracking). The load in pounds which produces this failure shall be taken as the compressive strength of the button. Extreme care shall be taken to apply the pressure centrally and evenly over the entire surface of the buttons which are in contact with the steel blocks. In case of conflict, test equipment with an automatic stress-strain recorder shall be used for referee testing. The rate of head travel shall not exceed 0.050 inch per minute. The compressive strength shall be taken from the chart as the highest reading in pounds prior to the first drop in the curve which corresponds with cracking of the buttons.

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4.7 Palletization examination. An examination shall be made to determine that the palletization complies with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the end item inspection lot. The inspection level shall be S-1 and the acceptable quality level, expressed in terms of defects per hundred units, shall be 6.5 as specified in MIL-STD-105.

| <u>Examine</u> | <u>Defect</u> |
|--------------------|---|
| Finished dimension | 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. |

1/ For these defects, one package shall be examined from each shipping container in the sample.

5. PACKAGING

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

5.1.1 Level A.

5.1.1.1 Twenty-five line buttons. Eight gross of 25 line buttons shall be packaged in a folding paperboard box conforming to variety 1, style III, type G, class i, of PPP-B-566; setup paperboard box conforming to type I, variety 1, class A, style 4 of PPP-B-676; or metal-stayed paperboard box conforming to style A if PPP-B-665. Outside dimensions of each paperboard box shall be 7 inches in length, 5-1/8 inches in width, and 2-3/16 inches in depth. Box closure shall be secured with a commercial 2-inch minimum width gummed paper tape applied at the center of the length opening and extending along the bottom and up the sides at least 2 inches.

5.1.1.2 Fifty line buttons. One gross of 50 line buttons shall be packaged in a folding paperboard box conforming to variety 1, style III, type G, class i, of PPP-B-566; setup paperboard box conforming to type I, variety 1, class A, style 4 of PPP-B-676. or metal-stayed paperboard box shall be style A of PPP-B-665. Outside dimensions of each paperboard box shall be 5-3/4 inches in length, 3-1/2 inches in width, and 3 inches in depth. Box closure shall be secured with a commercial 2-inch minimum width gummed paper tape applied at the center of the length opening and extending along the bottom and up the sides at least 2 inches.

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5.1.2 Level C. Buttons shall be packaged to afford adequate protection against physical damage during shipment from the contractor to the first receiving activity. The package and the quantity per package shall be the same as that normally used by the contractor for retail distribution.

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

5.2.1 Level A. One hundred and twenty gross of 25 line buttons or twenty gross of fifty line buttons, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled, closed and reinforced conforming to grade V15c, variety DW, type CF, class weather-resistant, size 1 of MIL-B-17757. Level A packages of 25 line buttons shall be packed on end, three in length, five in width, and one in depth; and 50 line buttons shall be packed on side, five in length, two in width, and two in depth within a shipping container.

5.2.2 Level B. One hundred and twenty gross of 25 line buttons or twenty gross of 50 line buttons, packaged as specified in 5.1, shall be packed in a fiberboard shipping container assembled and closed conforming to type CF, class domestic, variety DW, grade 200, size 1 of MIL-B-17757. Level A packages of 25 line buttons shall be packed on end, three in length, five in width, and one in depth; and 50 line buttons shall be packed on side, five in length, two in width, and two in depth within a shipping container.

5.2.3 Level C. Buttons, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such deliveries. The quantity per shipping container shall be the same as that normally used by the contractor for retail distribution. Containers shall comply with the US Postal Service Manual, Uniform Freight Classification Rules, or National Motor Freight Classification Rules, as applicable.

5.3 Marking. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

5.4 Palletization. When specified (see 6.2) item packed as specified in 5.2, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Each prepared load shall be bonded with primary and secondary straps in accordance with the bonding means C, K, and L, or O or P. Pallet patterns shall be in accordance with the appendix of MIL-STD-147. The pallet shall be 4-way, type IV; type V, class 1, size 2; or type VIII, fabricated from wood groups I, II, III, or IV, grade A of NN-P-71, or 4-way, style 1, size A, type I, class 1 fabricated from groups specified of MIL-P-15011. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the patterns specified in MIL-STD-147, the pallet pattern used shall first be approved by the contracting officer.

6. NOTES

6.1 Intended use. The buttons are intended for use as a component of clothing worn by Navy and Coast Guard personnel.

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6.2 Acquisition data. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. When a first article inspection is required, (see 3.2), the item will be tested and should be a first article sample. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, quantity, and testing and approval of the first article.
- 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. Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
- e. Class required (see 1.2).
- f. When palletization is required (see 5.4).

6.3 Samples. For access to samples, address the procuring office issuing the invitation for bids.

6.4 Definition. One line = 1/40 (0.025) inch.

6.5 Subject term (key word) listing.

Button, four hole sewing type
Insignia, anchor, countersunk
Melemine formaldehyde

Custodian:
Navy - NU

Preparing activity:
Navy - NU

Review activity:
DLA - CT

User activity:
Navy - CG

Project No. 8455-N351

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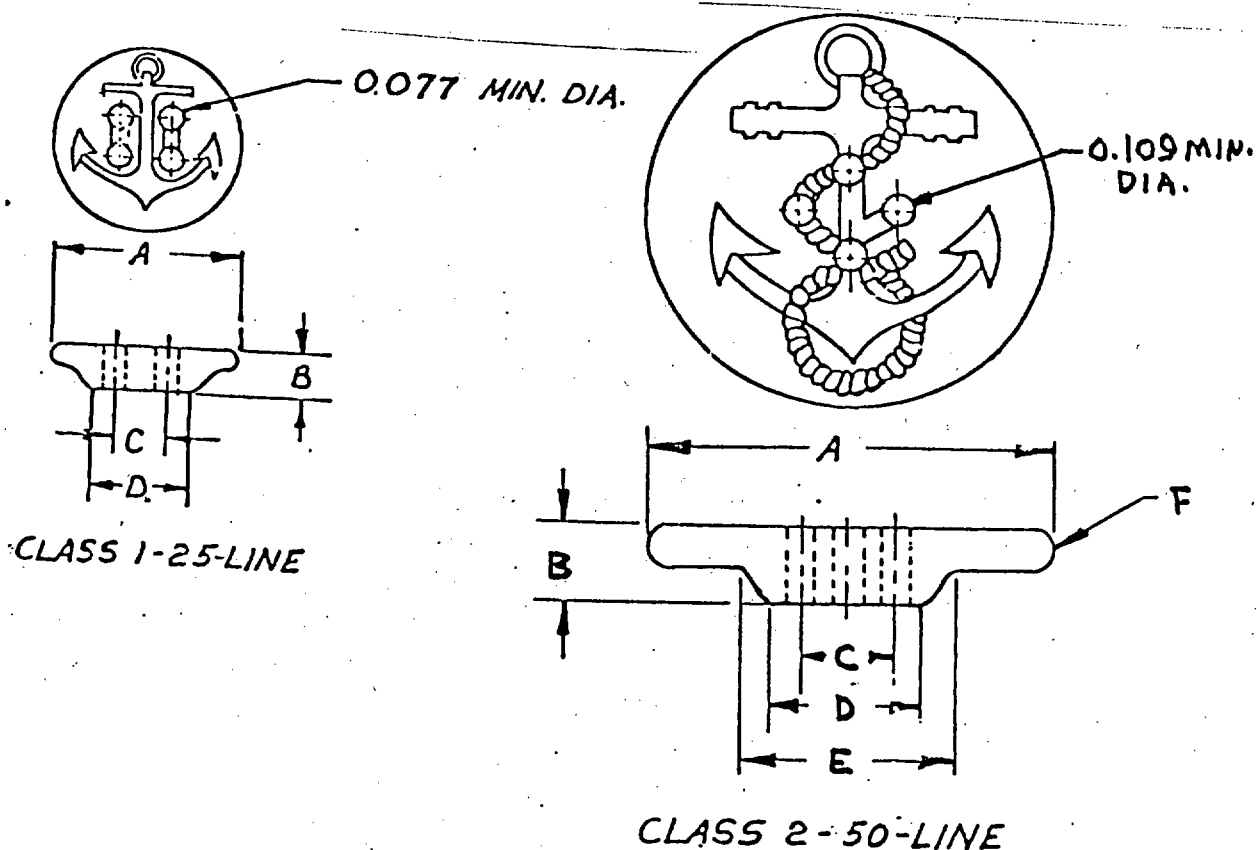


TABLE OF DIMENSIONS (INCHES)

| | Class 1 - 25 line | Class 2 - 50 line |
|---|-------------------|-------------------|
| A | 0.6250 (+0.0125) | 1.2500 (+0.0125) |
| B | 0.1563 (+0.0125) | 0.2500 (+0.0125) |
| C | 0.1250 (+0.0150) | 0.3125 (+0.0150) |
| D | 0.3750 (+0.0125) | 0.5000 (+0.0125) |
| E | | 0.6250 (+0.0125) |
| F | | 0.0625R (+0.0125) |

FIGURE 1 - BUTTON, INSIGNIA (ANCHOR, PLASTIC, BLACK)