

INCH-POUND

MIL-DTL-496D
w/AMENDMENT 1
28 April 2025
SUPERSEDING
MIL-C-496D
14 December 1982

DETAIL SPECIFICATION

CLIPS, END, STRAP

Inactive for new design after 31 July 1997.

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

1. SCOPE

1.1 Scope. This document covers the requirements for end clips used on textile straps.

1.2 Classification. Clips are of the following types, classes, and sizes as specified (see 6.2 and 6.5).

Type I – MS 51926 (Ball)

Class 1 – Brass.

Size – 5/8-inch, 3/4-inch, 1-inch, 1-1/4-inch, and 1-1/2-inch.

Class 2 – Steel.

Size – 5/8-inch, 3/4-inch, 1-inch, and 1-1/4-inch.

Type II – MS 70109 (Flat)

Class 1 – Brass

Size – 2-inch.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 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 cited in the solicitation or contract.

Comments, suggestions, or questions on this document should be addressed to: DLA Land and Maritime, Attn: VAI, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to FluidFlow@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.dla.mil>.



DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-495	-	Finish, Chemical, Black, for Copper Alloys
MIL-DTL-16232	-	Phosphate Coating, Heavy, Manganese or Zinc Base
MS 51926	-	Clip, End, Strap Type I, Class 1 and Class 2
MS 70109	-	Clip, End, Strap Type II, Class 1

(Copies of these documents are available online at <https://quicksearch.dla.mil/>)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ-Z1.4	-	Sampling Procedures and Tables for Inspection by Attributes
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(Copies of this document are available from <https://asq.org/> American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203.)

ASTM INTERNATIONAL (ASTM)

ASTM-A109/A109M	-	Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled
ASTM-B36/B36M	-	Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar
ASTM-B633	-	Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel

(Copies of these documents are available from <https://www.astm.org/> or the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), 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. When specified, a sample shall be subjected to first article inspection (see 4.3, 6.2, and 6.3)

3.2 Materials. Materials shall conform to the requirements specified herein and in the subsidiary documents applicable thereto (see 6.6).

3.2.1 Brass. Brass sheet and strip shall conform to copper alloy numbers C26800 or C26000, quarter-hard temper of ASTM B36/B36M.

3.2.2 Steel sheet and strip. Steel sheet and strip shall conform to cold rolled commercial quality and strip shall conform to cold rolled, temper No. 5 of ASTM A109/A109M. Chemical composition of the steel shall be within the range of SAE numbers 1009-1020.

3.2.3 Enamel. Enamel shall be black, semi-gloss.

3.3 Construction. Clips shall be constructed in accordance with the design, detail, and dimensions, as shown on the applicable Military Standard and as specified herein. The type I clip shall be as shown on MS 51926. The type II clip shall be as shown on MS 70109 and formed with the smooth edge of the material on the outside of the clip (see 6.4). When clips are assembled to a strap and tested as specified in Table II, no split edges shall be in evidence.

3.3.1 Type I clips.

3.3.1.1 Class 1. Type I, class 1 clips shall be fabricated of brass specified in 3.2.1 and as shown on MS 51926.

3.3.1.2 Class 2. Type I, class 2 clips shall be fabricated of steel specified in 3.2.2 and s shown on MS 51926.

3.3.2 Type II, Class 1 clips. Type II, class 1 clips shall be fabricated of brass specified in 3.2.1 and as shown on MS 70109.

3.4 Finish. The clips shall be finished as specified herein. Prior to finishing, all clips shall be thoroughly cleaned in accordance with commercial practice and shall be free of corrosion, dirt, or discoloration.

3.4.1 Class 1, brass. Unless otherwise specified (see 6.2), type I and II brass clips shall be given a black chemical finish conforming to MIL-DTL-495 and tested as specified in Table II. When clip is assembled to a strap and tested as specified in Table II, the black chemical finish shall not flake.

3.4.2 Class 2, steel. Unless otherwise specified, class 2 clips shall be zinc plated and phosphate finished in accordance with type IV of ASTM B-633, followed by bake enameling. The enamel shall be as specified in 3.2.3. The enamel coating shall level out to a uniform, dry film thickness without orange peel, wrinkles, drops, streaks, or areas of no film. When clip is assembled to a strap and tested as specified in Table II, the enameling on the clips shall be free of cracks or spalls.

3.4.2.1 Class 2, steel optional finishes. When specified (see 6.2), the following finishes on class 2 clips will be permitted.

- (a) Phosphate coating conforming to type M or 4, class 1 or 2 of MIL-DTL-16232.
- (b) Zinc plating conforming to type III, of ASTM B-633.

When clip is assembled to a strap and tested as specified in Table II, the coating shall not flake, exposing bare metal.

3.5 Workmanship. The clips shall be free from digs or gouges, burrs, slivers, sharp edges (except that on the type II clip, rough or sharp edges shall be permitted on the inside edge), dents or tool marks.

4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.2 First article inspection. When a first article is required (see 6.2), it shall be examined for the defects specified in 4.3.3 and tested as specified in 4.3.4. The presence of any defect or failure to pass any test shall be cause for rejection of the first article.

4.3 Conformance inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with ASQ Z1.4.

4.3.1 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this document or an applicable purchase document.

4.3.2 In-process inspection. In-process inspection shall be conducted to insure that clips are thoroughly cleaned and free of corrosion and dirt before finishing (see 3.4) and that zinc plating (see 3.4.2) has been accomplished. Whenever nonconformance is noted, corrections shall be made to the affected items and process.

4.3.3 End item inspection. The inspection lot shall consist of all completely finished specified clips of the applicable MS offered for inspection at one time. The sample unit of this inspection shall be 1 clip.

4.3.3.1 Visual examination. The clips shall be examined for the defects listed in Table I. The inspection level shall be II and the acceptable quality level (AQL) expressed in terms of defects per hundred units, shall be 2.5 for major defects, and 6.5 total (major and minor combined) defects.

TABLE I. Visual defects

Examine	Defect	Classification	
		Major	Minor
Color and finish	Not finished or the type of finish is not as specified.	X	
	Dents, nicks, pores, abrasions, pits, or scratches.	X	
	Discoloration clearly noticeable.	X	
	Foreign matter embedded in finish of surfaces exposed to view when in use	X	
	Foreign matter embedded in finish but not exposed to view when in use.		X
	Coating is not level, uniform, and continuous, e.g. runs, orange peel, wrinkles, drops, or streaks.	X	
	Area of no film.	X	
	Finish is tacky to touch.	X	
	Plating (when applicable) is broken, cut through, corroded, or erupted.	X	
Type	Not as specified or as shown on Military Standard.	X	
	Type II clip not formed with smooth edge on outside.	X	
Construction and workmanship	Component cracked, fractured, malformed, distorted, or bent.	X	
	Digs, gouges, burrs, slivers, sharp edges, dents, or tool marks (rough or sharp edges on inside of type II clip permitted).	X	
	Edge not clean, e.g., sharp burr or fin.	X	

4.3.3.2 Dimensional examination. The clips shall be examined for compliance with dimensions specified. Any dimension not within the specified requirements shall be classified as a defect. The inspection level shall be S-2 and the AQL shall be 4.0 defects per hundred units.

4.3.4 End item testing. The finished clip shall be tested as specified in Table II for the characteristics shown therein. The inspection level shall be S-1 and the AQL shall be 6.5 defects per hundred units. The sample unit shall be three (3) clips

TABLE II. Test methods

Characteristic	Requirement paragraph	Test method	No. determinations per sample unit	Results reported as
Split edges showing	3.3	4.4.1	1	Pass or fail
Type I and II Black chemical finish for brass clips:				
a. Color and gloss	3.4.1	MIL-DTL-495	1	Pass or fail
b. Resistance to hot soap solution	3.4.1	MIL-DTL-495	1	Pass or fail
c. Resistance to accelerated weathering	3.4.1	MIL-DTL-495	1	Pass or fail
Integrity of enamel coating	3.4.2	4.4.1	1	Pass or fail
Integrity of optional finishes	3.4.2.1	4.4.1	1	Pass or fail

4.4 Methods of inspection.

4.4.1 Setting test for adequacy of finish and split edges. End clips shall be firmly set by any commercial method on a corresponding size strap and examined for compliance with requirements specified in 3.3, 3.4.1, 3.4.2, and 3.4.2.1 as applicable.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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

6.1 Intended use. Clips are intended to keep strap ends from unraveling on clothing and equipage items.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this document and applicable MS.
- b. Type, class, and size required (see 1.2 and applicable MS).
- c. When a first article sample is required (see 3.1, 4.3, and 6.3).
- d. When a finish other than black chemical is required (see 3.4.1).
- e. When optional finish is permitted (see 3.4.2.1).

6.3 First article. When a first article sample is required, it should be inspected and approved under the appropriate provisions of DAR 7-104.55. The first article should be a pre-production sample. The first article should consist of one unit. The contracting officer should include specific instructions in all acquisition documents regarding arrangements for inspection and approval of the first article.

6.4 Sharp edges. Punching of the blank for the clip produces a typical smeared edge which is smooth on one side and rough or sharp on the opposite side (see 3.3).

6.5 Sizes. The clips are available only for webbing widths as shown on MS 51925 and MS 70109.

6.6 Recycled material. It is encouraged that recycled material be used when practical as long as it meets the requirements of the document (see 3.2).

6.7 Subject term (key word) listing.

Coating, Phosphate
Coating, Zinc
Finish, Chemical, Black

6.8 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

CONCLUDING MATERIAL

Custodians:
Army – GL
Air Force – 71

Preparing Activity:
DLA – CC

(Project Number - 5340-2025-011)

Review Activities:
Army – AR, CR4, EA, MD, MI
Navy – CG, MC

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <https://assist.dla.mil/>.