

INCH-POUND

MIL-DTL-639E
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SUPERSEDING
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DETAIL SPECIFICATION

HOOKS (FOR BELTS, STRAPS, AND EQUIPAGE ITEMS)

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 metal hooks for belts, straps, and equipage items.

1.2 Classification. Hooks are categorized in the following types, classes, and sizes as specified (see 6.2):

Type I – Hook, double, vertical loop

Class 1 – Brass wire

Class 2 – Steel wire

Sizes 1 and 2 (see Drawing 4-1-67)

Type II – Hook, double, horizontal loop

Class 1 – Brass wire

Class 2 – Steel wire

Type III – Hook, hanger, canteen

Class 1 – Brass wire

Class 2 – Steel wire

Type IV – Hook, end, double

Class 1 – Brass wire

Class 2 – Steel wire

Type V – Hook, loop

Class 1 – Brass wire

Class 2 – Steel wire

Type VI – Hook, back strap, with roller, 1-1/4 inch

Type VII – Hook, side strap, with roller, 1 inch

Type VIII – Hook, "S"

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>.

Type IX – Hook, end

Type X – Hook, stud

Class 1 – Brass wire

Class 2 – Iron, malleable

Type XI – Hook, sliding, 5/8 inch

Class 1 – Brass wire

Class 2 – Steel

Type XII – Hook, “S” (commercial)

Class 1 – Brass wire

Sizes A to K (see Drawing 4-1-67)

Class 2 – Steel wire

Sizes A to K (see Drawing 4-1-67)

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.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-495 - FINISH, CHEMICAL, BLACK, FOR COPPER ALLOYS

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

2.2.2 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 of these documents are those cited in the solicitation or contract.

U.S. ARMY NATICK DRAWINGS

4-1-67 - Hooks, for Belts, Straps and Equipage Items

4-1-68 - Hooks, for Belts, Straps and Equipage Items

(Copies of the Drawings required by contractors in connection with specific acquisition functions may be obtained from the procuring activity at DSCC.cddwgs@dlamail, or as directed by the contracting officer.)

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.

ASTM INTERNATIONAL

ASTM A47/A47M	- Standard Specification for Ferritic Malleable Iron Castings
ASTM A853	- Standard Specification for Steel Wire, Carbon, for General Use
ASTM B36/36M	- Standard Specification for Brass Plate, Sheet, Strip, And Rolled Bar
ASTM B134/134M	- Standard Specification for Brass Wire
ASTM B584	- Standard Specification for Copper Alloy Sand Castings for General Applications
ASTM B633	- Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel

(Copies of these documents are available online at <https://www.astm.org>.)

SAE INTERNATIONAL

SAE AMS-QQ-N-290	- Nickel Plating (Electrodeposited)
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(Copies of these documents are available online at <https://www.sae.org>.)

AMERICAN SOCIETY FOR QUALITY

ASQ Z1.4	- SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES
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(Copies of these documents are available online at <https://asq.org>.)

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, 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 in the contract or purchase order, a sample shall be subject to first article inspection accordance with 4.2.

3.2 Materials. The specified materials shall conform to the referenced documents specified herein. Recycled material may be used (see 6.4).

3.2.1 Brass casting. Brass casting shall conform to alloy No. C85700 or C85400 of ASTM B584.

3.2.2 Brass wire. The brass wire shall conform to alloy No. C26000 or C27000, three-quarter hard temper as specified in ASTM B134/B134M.

3.2.3 Brass sheet or strip. The brass sheet or strip shall conform to alloy No. C26000 or C26800, half-hard temper of ASTM B36/B36M.

3.2.4 Steel wire. The steel wire shall conform to steel No. 1015 or 1035, hard drawn, of ASTM A853.

3.2.5 Steel sheet or strip. The steel sheet shall conform to hot rolled commercial quality (HRCQ) or cold rolled commercial quality (CRCQ) of QQ-S-698. The steel strip shall conform to HRCQ or cold rolled half-hard, No. 2 temper of QQ-S-698.

3.2.6 Iron, malleable. The malleable iron castings shall conform to grade 35018, galvanized or ungalvanized, in accordance with ASTM A47/47M, except that marking requirements do not apply.

3.2.7 Enamel. The enamel shall be black, semi-gloss (See 6.4).

3.3 Construction. The construction of the hooks shall conform to the design, dimensions, and sizes as shown in Drawings 4-1-67 and 4-1-68.

3.3.1 Types I, II, III, IV, V, and XII, class 1 hooks. The types I, II, III, IV, V, and XII, class 1 hooks shall be fabricated from material specified in 3.2.2. The type III, class 1 and type V, class 1 hooks shall have the ends joined after forming by brazing. The joint shall be sound and smooth.

3.3.2 Types I, II, III, IV, V, and XII, class 2; and types VIII and IX hooks. The types I, II, III, IV, V, and XII, class 2, and types VIII and IX hooks shall be fabricated from material specified in 3.2.4, except that for type I, size 2 only, the steel number shall be 1035. They type III, class 2, and type V, class 2 hooks shall have the ends joined after forming by welding. The welded joints shall be sound and smooth.

3.3.3 Types VI and VII hooks. The types VI and VII hooks shall be cast from grade I material specified in 3.2.6.

3.3.3.1 Rollers for types VI and VII hooks. The rollers for the hooks shall be fabricated from materials specified in 3.2.5. The rollers shall rotate freely, and the butting edges shall be smooth and free from burrs or rough edges.

3.3.4 Type X, class 1 hook. The type X, class 1 hook shall be cast from material specified in 3.2.1.

3.3.5 Type X, class 2 hook. The type X, class 2 hook shall be cast from galvanized material specified in 3.2.6.

3.3.6 Type XI, class 1 hook. The type XI, class 1 hook shall be fabricated from material specified in 3.2.3 and to the dimensions specified in Drawing 4-1-68.

3.3.7 Type XI, class 2 hook. The type XI, class 2 hook shall be fabricated from material specified in 3.2.5 and to the dimensions specified on Drawing 4-1-68.

3.3.8 Castings. All castings shall be sound and free from pits, blowholes, porosity, fractures, and cracks. The castings shall be smooth and clean prior to application of finish.

3.3.9 Stampings. All fabricated stampings shall be free from rough and sharp edges before final finish is applied.

3.4 Finish.

3.4.1 Types I, II, III, X, and XI, class 1 hooks. The types I, II, III, X, and XI, class 1 hooks shall be given a black chemical finish and shall show resistance to hot soap solution and resistance to accelerated weathering in accordance with MIL-DTL-495.

3.4.2 Types I, II, III, IV, V, X, and XI, class 2; and types VI, VII, VIII, and IX hooks. The types I, II, III, IV, V, X, and XI, class 2, and types VI, VII, VIII, and IX hooks shall be given a phosphate-treated zinc plate conforming to type IV, classification Fe/Zn12 Sc 3 of ASTM B633, followed by baked enamel as specified in 3.2.7. The coating shall level out to a uniform dry film thickness without orange peel, wrinkles, drops, streaks, or areas of no film.

3.4.3 Types IV and V, class 1 hooks. The types IV and V, class 1 hooks shall be given a bright nickel finish conforming to class 1, grade E of SAE AMS-QQ-N-290. Finished hooks shall be buffed and polished.

3.4.4 Type XII, class 2 hooks. The type XII, class 2 steel hooks after complete fabrication shall be galvanized by the hot dip method. The galvanization shall be in accordance with the manufacturer's commercial practice, uniformly smooth, adherent, and free from drippings.

3.5 Marking. All hooks shall be marked in an inconspicuous location with the manufacturer's identification in such a manner that the stamping is not distorted, bent, or malformed.

3.6 Workmanship. All surfaces shall be smooth and free from burrs, slivers, rough or sharp edges, pits, blowholes, porosity, and cracks.

4. VERIFICATION

4.1 Classification of inspections.

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

4.2 First article inspection. When a first article inspection is required (see 3.1), the samples shall be examined for the defects specified in 4.3.3 and 4.3.4. Types I, II, III, X, and XI, class 1 hooks shall be tested for the characteristics specified in 4.3.5. The presence of any defect or failure to pass any test, when applicable, 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 applicable purchase document.

4.3.2 In-process inspection. Inspection of sub-assemblies shall be performed to ascertain that construction details which cannot be examined in the finished product are in accordance with specified requirements.

4.3.2.1 Plating. Examination shall be conducted for application of plating specified in 3.4.2, prior to application of enamel.

4.3.3 End item visual examination. The end item shall be examined for the defects listed in table I. The lot size shall be expressed in units of completely fabricated hooks of one type, class, and size. The sample unit shall be one completely fabricated hook. The inspection level in accordance with ASQ Z1.4 shall be II.

TABLE I. End item visual defects.

Examine	Defect	Classification	
		Major	Minor
Finish	Not smooth		201
	Not specified color, when applicable		202
	Not clean (i.e. dirt, dust, grease stain, oil, or welding flux embedded in finish)		203
	Nickel finish hooks not buffed and polished		204
	Enamel finished hooks have orange peel, wrinkles, drops, streaks, or areas of no film		205
	Hot dipped galvanized hooks not uniformly smooth, adherent, or free from drippings		206
	Type XII, class 1 hooks not bright finished		207
Construction and workmanship	Size or design not as specified	101	
	Unsound castings (i.e. porous, warped, cracked, fractured, or containing blowholes)	102	
	Stampings distorted, bent, or malformed	103	
	Rough or sharp edges not removed	104	
	Weld or braze missing, broken, or not fused, smooth, or sound, where applicable	105	
	Rollers do not rotate freely	106	
Marking	Missing, incorrect, incomplete, or illegible		208

4.3.4 End item dimensional examination. The end item shall be examined for the dimensions specified in the applicable Drawing. The lot size shall be expressed in completely fabricated hooks of one type, class, and size. The inspection level in accordance with ASQ Z1.4 shall be II.

4.3.5 End item testing. The types I, II, III, X, and XI, class 1 hooks shall be tested for all the characteristics in table II. The lot size shall be expressed in completely fabricated hooks of one type, class, and size. The inspection level in accordance with ASQ Z1.4 shall be S-1.

TABLE II. End item tests.

Characteristic	Requirement paragraph	Test method	No. of determinations per sample unit	Results reported as
Black chemical finish color and gloss	3.4.1	MIL-DTL-495	1	Pass or fail
Resistance to hot soap solution	3.4.1	MIL-DTL-495	1	Pass or fail
Resistance to accelerated weathering	3.4.1	MIL-DTL-495	1	Pass or fail

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. Hooks are intended to be used with belts, straps, and equipage items used by personnel of the Armed Forces.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number, and date of this document.
- b. Type, class, and size of hook required (see 1.2).
- c. When first article inspection is required (see 3.1, 4.3).
- d. Packaging requirements (see 5.1).

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

6.4 Enamel. TT-E-529 was originally used to define enamel coating requirements. TT-E-529 was cancelled and replaced by A-A-2962. A-A-2962 was cancelled without replacement, and the following suggested replacement information was provided in the second cancellation notice.

Master Painters Institute,
 Reference #8, Exterior Alkyd, Flat, MPI Gloss Level 1
 Reference #9, Exterior Alkyd Enamel, Gloss, MPI Gloss Level 6
 Reference #47, Interior Alkyd, Semi-Gloss, MPI Gloss Level 5
 Reference #48, Interior Alkyd, Gloss, MPI Gloss Level 6
 Reference #49, Interior Alkyd, Flat, MPI Gloss Level 1
 Reference #51, Interior Alkyd, Eggshell, MPI Gloss Level 3
 Reference #94, Exterior Alkyd, Semi-Gloss, MPI Gloss Level 5

6.5 Subject term (key word) listing.

Fasteners
 Hooks

6.6 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes 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

CONCLUDING MATERIAL

Custodians:
 Army – GL
 Navy – YD
 Air Force – 71

Preparing activity:
 DLA – CC
 (Project 5340-2025-019)

Review activities:
 Army – CR4, EA
 Navy – 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 Online database at <https://assist.dla.mil>.