

INCH-POUND

MIL-C-70842
w/AMENDMENT 1
28 May 2012

SUPERSEDING
MIL-C-70842 (AR)
15 August 1994

MILITARY SPECIFICATION

CONTAINER, SHIPPING AND STORAGE, CARTRIDGE, 40MM, PA120 GENERAL SPECIFICATION FOR

This specification is approved for use by the US Army Armament Munitions and Chemical Compound, 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, examinations and tests for Container, Shipping and Storage, Cartridge, 40mm, PA120. The container is used for holding ammunition during usage, shipping, and storage (see 6.1).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

Comments, suggestions, or questions on this document should be addressed to: Commander, U.S. Army ARDEC, ATTN: RDAR-QES-E, Picatinny Arsenal, New Jersey 07806-5000 or e-mailed to ardecstdzn@conus.army.mil. Since contact information can change, you may want to verify the currency of this information using ASSIST Online database at <https://assist.dla.mil>.

AMSC N/A

FSC 8140

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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 issue of these documents shall be those listed in the Department of Defense Index of Specifications and Standards (DoDISS) and supplement there to, cited in the solicitation (See 6.2)

SPECIFICATIONS

FEDERAL

TT-C-490 - Cleaning Methods and Pretreatments of Ferrous Surfaces for Organic Coatings.

MILITARY

MIL-W-12332 - Welding, Resistance, Spot, Seam, and Projection; for Fabricating Assemblies of Low-Carbon Steel
MIL-A-48078 - Ammunition, Standard Quality Assurance Provisions, General Specification for

STANDARDS

MILITARY

MIL-STD-109 - Quality Assurance Terms and Definitions
MIL-STD-171 - Finishing of Metal and Wood Surfaces
MIL-STD-406 - Visual Inspection Standards for Terne Plate Cans and Steel Boxes Used in Small Arms Ammunition Packaging
MIL-STD-414 - Sampling Procedures and Tables for Inspection by Variables for Percent Defective

(Copies of these documents are available online at <https://assist.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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 (see 6.4)

U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
(ARDEC)

12564414 - Container, Shipping and Storage Cartridge, 40mm, PA120
12564415 - Body Assembly

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12564416	- Cover Assembly
12998172	- Coatings, High Performance (For Ammunition Containers)
12564424	- Hasp

(Copies of these drawings may be requested online at pica.drawing.request@conus.army.mil or from U.S. Army ARDEC, ATTN: RDAR-AIS-TD, Picatinny Arsenal, NJ 07806-5000.)

2.2 Non-Government publications. The following document(s) 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)

AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL
(ASTM)

ASTM B 117	- Standard Practice for Operating Salt Spray (Fog) Apparatus
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(Copies may be ordered from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, <http://www.astm.org>).

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 takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained. (See contract provisions for additional precedence criteria).

3. REQUIREMENTS

3.1 Materials. Materials shall be in accordance with the applicable drawings and specifications.

3.2 Components and assemblies. The components and assemblies shall comply with all requirements specified on Drawing 12564414, all associated drawings, and with all requirements specified in applicable specifications and drawings.

3.3 Temperature.

3.3.1 Elevated temperature (storage). The container shall not suffer permanent damage when subjected to constant temperature of +163° F degree Fahrenheit for a period of 24 hours (after temperature stabilization) and shall meet the requirements of 3.4 when returned to a minimum temperature of 50° F degree Fahrenheit.

3.4 Performance.

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3.4.1 Cover assembly. The locking hardware shall be operable manually. The cover assembly shall be removable manually without the use of tools or an excessive exorbitant amount of force. The gasket shall remain secure in the correct position within the cover upon removal of the cover assembly. The gasket shall not stick to, be cut or split by contact against the top edge of the body assembly. The cover assembly shall also be able to be locked without tools or an excessive amount of force.

3.4.2 Hasp and latch. Mating parts of the body hasp and the latch shall engage without requiring deformation of any container part, and the latch shall close and open freely. When closed, the latch of the assembled container shall remain closed until manually opened.

3.5 Airtightness. The assembled container shall withstand, without leakage, a minimum air pressure differential of three (3) pounds per square inch (psi).

3.6 Weld procedure. Fabrication of the container shall be in accordance with the recorded welding procedure requirements of MIL-W-12332.

3.7 Protective coating.

3.7.1 Pretreatment. The cleaning method and pretreatment process used shall comply with the requirements of Dwgs. 12564415 and 12564416 and MIL-STD-171. The phosphate coating shall comply with Finish 5.1.1 of MIL-STD-171.

3.7.2 Paint. The paint shall comply with the requirements of Dwgs. 12576144 and 12998172. In addition, the coating shall comply with the requirements of MIL-STD-406. Adhesion of the paint to the pretreated surfaces shall comply with the applicable requirements of MIL-STD-171, Finish 5.1.1.

3.7.3 Corrosion resistance. The exterior surface of the box shall show no visible evidence of paint blistering, creepage (loss of adhesion), or corrosion of base metal in excess of 1/8 inch on either side of the score marks, or rusting of parts of the hardware subject to pressure of abrasion in normal use or exceeding the standards permissible in MIL-STD-406, or more than five (5) scattered blisters or corrosion spots having individual diameters greater than 3/16" in diameter in any 4 X 12 inch flat area, excluding score marks, after exposure to a 5% solution of salt spray for 96 hours.

3.8 Gasket compression. The gasket compression of the container shall be as specified by Dwg. 12564414.

3.9 Weld security.

3.9.1 Hasp. Each hasp of the body assembly shall comply with the security requirement of drawing 12564415 without permanent deformation or failure of a weld.

3.9.2 Handle. The handles of the body assembly shall withstand a pull of 600 pounds, minimum, without permanent deformation of a component or failure of a weld.

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3.9.3 Latch assembly. The latch assemblies of the cover assembly shall comply with the security requirement of Dwg. 12564416 without breakage or permanent deformation of any components or welds.

3.10 Flatness.

3.10.1 Cover assembly. The cover assembly shall meet the requirements of Dwg. 12564416 for flatness.

3.10.2 Body assembly. The top edges of the body assembly shall meet the requirements of Dwg. 12564415 for flatness.

3.11 First article. When specified in the contract or purchase order (see 6.2), a sample shall be subjected to first article inspection in accordance with the technical provisions herein (see 4.3).

3.12 Workmanship. The quality of workmanship shall not adversely affect safety, function, performance, serviceability and appearance. Completed parts and assemblies shall not exhibit defective material or processing such as: cracked or split components, extraneous material, steel parts, burrs or sharp edges, scores and gouges, mutilated metal components, missing operations, improper assembly, missing parts, stains, corrosion, non specified oxidation (rust), unauthorized salvaging operations (e.g., hammering to shape, repair by welding (except for bottom seam weld) straightening, bending, etc.).

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 the 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 section 3 and 5. The inspection set forth in this specification shall become a part of 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 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.

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4.1.2 General provisions. Unless otherwise specified herein, the provisions of MIL-A-48078 apply and form a part of this specification. Reference shall be made to MIL-STD-109 to define quality assurance terms used herein.

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

- a. First article inspection (see 4.3)
- b. Quality conformance inspection (see 4.4)

4.3 First article inspection.

4.3.1 Submission. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with provisions of 4.3.2. The first article sample shall consist of the items in sample quantities as indicated in Table I.

4.3.2 Inspection to be performed. First article samples shall be tested in accordance with Table I. As determined by the Government, the first article assemblies, components and test specimens may be subject to any or all of the examinations and tests specified in this detail specification and be inspected for compliance with any or all requirements of the applicable drawings.

4.3.3 Rejection. If any assembly, component or test specimen fails to comply with any of the applicable requirements, the first article sample shall be rejected. The Government reserves the right to terminate inspection upon the failure of an assembly, component or test specimen to comply with any of the requirements. In the event of rejection, the Government reserves the right to require the contractor to take corrective action and submit a new first article quantity.

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TABLE I. First article inspection
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE Container Assembly	SHEET 1 OF 2		DRAWING NUMBER 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANC E CRITERIA	REQUIREMEN T PARAGRAPH	INSPECTION METHOD REFERENCE
	Container Assembly (Dwg. 12564414) Examination for defects	50	3.2, 3.12	4.4.2.3
	Elevated temperature (storage)	8	3.2	4.5.1
	Performance	8	3.4	4.5.2
	Airtightness	50	3.5	4.5.3
	Pretreatment	1/	3.7.1	4.5.4
	Paint thickness/adhesion	3 2/	3.7.2	4.5.5
	Corrosion resistance	2	3.7.3	4.5.6
	Gasket compression	10	3.8	4.5.7
	Weld security	8	3.9	4.5.8
	Hasp		3.9.1	
	Handle		3.9.2	
	Latch		3.9.3	

NOTES:
1/ Three (3) standard panels per TT-C-490
2/ For boxes coated with powder coating only, the hasp shall be removed from the container body assembly and the coating thickness on the exposed surfaces inside the pinhole shall be tested in accordance with 4.5.5.1

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TABLE I. First article inspection
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE Container Assembly		SHEET 2 OF 2	DRAWING NUMBER 12564414
CLASSIFICATON	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
	Body Assembly (Dwg 12564415) Examination for defects	50	3.2, 3.7.2, 3.10.2, 3.12	4.4.2.1
	Cover assembly (Dwg. 12564416)	50	3.2, 3.4.1, 3.7.2, 3.12, 3.10.1	4.4.2.2
NOTES				

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4.4 Quality conformance inspection. Quality conformance inspection shall be as specified in 4.4.2.1 through 4.4.2.3.

4.4.1 Inspection lot formation. The term “inspection lot” is defined as a homogeneous collection of units of product from which a representative sample is drawn or which is inspected 100 percent to determine conformance with applicable requirements. Units of product selected for inspection shall represent only the inspection lot from which drawn and should not be construed to represent any prior or subsequent quantities presented for inspection. Homogeneity shall be considered to exist provided the inspection lot has been produced by one manufacturer, in one unchanged process, using the same materials and methods, in accordance with the same drawings, same drawing revisions, and same specifications and specification revisions. All material submitted for inspection in accordance with this specification shall comply with the homogeneity criteria specified herein, regardless of the type of inspection procedure which is being applied to determine conformance with requirements.

4.4.1.1 Lot identification. The cover and body assemblies of each container of the lot shall be identified as specified by Dwgs 12564415 and 12564416 supplemented as directed by the procuring activity.

4.4.2 Examination and tests.

a. Classification of characteristics. Quality conformance examinations and tests are specified in the following Classification of Characteristics paragraphs. The contractor’s quality program or detailed inspection system shall provide assurance of compliance of all characteristics with the applicable drawing and specification requirements utilizing as a minimum the conformance criteria specified. When cited herein, attributes sampling inspection shall be conducted in accordance with Table II using inspection levels stated in the Classification of Characteristics paragraphs.

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Table II. Attribute sampling inspection

<u>Lot Size</u>	<u>Inspection Levels</u>	
	<u>I</u>	<u>II</u>
2 to 8	*	*
9 to 15	*	*
16 to 25	*	20
26 to 50	32	20
51 to 90	32	20
91 to 150	32	20
151 to 280	32	20
281 to 500	48	47
501 to 1200	73	47
1201 to 3200	73	53
3201 to 10000	86	68
10001 to 35000	108	77
35001 to 150000	123	96
150001 to 500000	156	119
500001 and over	189	143

Number under inspection levels indicate sample size; asterisks (*) indicate one hundred percent inspection. If sample size exceeds lot size, perform one hundred percent inspection. Accept on zero and reject on one or more for all inspection levels.

b. Alternative quality conformance. Unless otherwise specified herein or provided for in the contract, alternative quality conformance procedures, methods, or equipment, such as statistical process control, tool control, variables sampling or other types of samples plans, etc., may be used by the contractor when they provide, as a minimum, the level of quality assurance required by the provisions herein. Prior to applying such alternative procedures, methods, or equipment, the contractor shall describe them in a written proposal submitted to the Government for evaluation (see 6.6). When required, the contractor shall demonstrate that the effectiveness of each proposed alternative is equal to or better than the specified quality conformance provision(s) herein. In cases of dispute as to whether the contractor's proposed alternative(s) provides equivalent assurance, the provisions of this specification shall apply. All approved alternative provisions shall be specifically incorporated into the contractor's quality program or inspection system, as applicable.

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE		SHEET 1 OF 2	DRAWING NUMBER 12564415
4.4.2.1	Body Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None Defined.			
Major				
101.	Inside width, body assembly, mm	LEVEL I	3.2	Gage
102.	Inside length, body assembly, mm	LEVEL I	3.2	Gage
103.	Inside depth, body assembly, mm	LEVEL I <u>4/</u>	3.2	Gage
104.	Flatness	50 <u>1/</u>	3.10.2	4.5.9.2
105.	Interior of exterior paint missing or nonconforming	LEVEL I	3.7.2	Visual/Gage <u>2/ 3/</u>
106.	Corrosion	LEVEL I	3.2	Visual
107.	Outside width of body assembly, Max. (along entire length in the region ½ inch in height from the bottom of the container)	100%	3.2	Gage
108	Minimum diameter thru hasp (2 places)	100%	3.2	Gage
Minor				
201.	Evidence of poor workmanship	Level II	3.12	Visual

NOTES:

1/ Failure of four or more units of the sample to comply with the requirement shall be cause for rejection of the lot. If two (2) or three (3) units of the sample fail to comply with the requirements, a second sample consisting of the same number of units as specified for the first sample shall be tested. If in the accumulated samples, five (5) or more units fail to comply with the requirement, the lot shall be rejected.

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 2 OF 2		DRAWING NUMBER 12564415
4.4.2.1	Body Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<p>NOTES:</p> <p><u>2/</u> MIL-STD-406 shall be used as a guide to classify paint defects. In the standard, defects classified as incidental shall be considered permissible; defects classified as minor shall be considered major. Missing, damaged or incomplete paint shall be classified as a major defect. Bare spots on any subassembly which do not accumulate to exceed 1/2 square inch in area or scratches which do not penetrate to the phosphate coating shall be disregarded.</p> <p><u>3/</u> For boxes coated with powder coating only, the hasp (12564424) shall be removed from the container body assembly, and the coating thickness on the exposed surfaces inside the pinhole (See Detail A of Dwg 12564415) shall be tested in accordance with 4.5.5.1.</p> <p><u>4/</u> Inspection of "Inside depth, body assembly, min" shall be conducted at inside corner of Body Assembly</p>				

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 2		DRAWING NUMBER 12564416
4.4.2.2	Cover Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101.	Width, inside cover (2 places)	Level I	3.2	Gage
102.	Interior of exterior paint missing	Level I	3.7.2	Visual <u>1/</u>
103.	Corrosion	Level I	3.2	Visual
104.	Missing, inverted, loose, misaligned or defective gasket	Level I	3.4.1	Visual-Manual <u>2/</u>
105.	Flatness	50 <u>3/</u>	3.10.1	4.5.9.1
Minor				
201.	Poor workmanship	Level II	3.12	Visual
<p>NOTES: <u>1/</u> MIL-STD-406 shall be used as a guide to classify paint defects. In the standard, defects classified as incidental shall be considered permissible; defects classified as minor shall be considered major. Missing, damaged or incomplete paint shall be classified as a defect. Bare spots on any subassembly which do not accumulate to exceed 1/2 square inch in area or scratches which do not penetrate to the phosphate coating shall be disregarded.</p>				

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 2 OF 2		DRAWING NUMBER 12564416
4.4.2.2	Cover Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
<p>NOTES:</p> <p>2/ If the gasket is missing, inverted, broken, split or torn, contains a gross defect in texture, fit or can be shifted horizontally within the gasket retainer by finger pressure of manual shaking of the cover assembly, the sample unit shall be classified as defective.</p> <p>3/ Failure of four or more units of the sample to comply with the requirement shall be cause for rejection of the 1t. If two (2) or three (3) units of the sample fail to comply with the requirements, a second sample consisting of the same number of units as specified for the first sample shall be tested. If in the accumulated samples, five (5) or more units fail to comply with requirement, the lot shall be rejected.</p>				

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 1 OF 2		DRAWING NUMBER 12564414
4.4.2.3	Container Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMANCE CRITERIA	REQUIREMENT PARAGRAPH	INSPECTION METHOD REFERENCE
Critical	None defined			
Major				
101.	Cracked or split component	Level I	3.12	Visual
102.	Missing, incomplete, improper assembly of any component	Level I	3.12	Visual
103.	Missing, incomplete or improper welds	Level I	3.12	Visual
104.	Mutilated metal component	Level I	3.12	Visual <u>1/</u>
105.	Steel sliver, burr or sharp edge	Level I	3.12	Visual – Manual <u>2/</u>
106.	Elevated temperature (storage)	8	3/ 3.3	4.5.1
107.	Performance	8	3/ 3.4	4.5.2
108.	Airtightness	50	4/ 3.5	4.5.3
109.	Pretreatment	5/ 6/	3.7.1	4.5.4
110.	Paint adhesion	3	7/ 3.7.2	4.5.5
111.	Corrosion resistance	2	8/ 3.7.3	4.5.6
112.	Gasket compression	10	9/ 3.8	4.5.7
113.	Weld security	8	10/ 3.9	4.5.8
	Hasp			
	Handle			
	Latch Assembly			
NOTES:				
<u>1/</u> If the, body or cover is severely dented or malformed, or the closing or locking hardware is bent or otherwise distorted to cause a functional failure or become a personnel hazard, the sample unit shall be classified defective.				
<u>2/</u> If a steel sliver, burr or sharp edge which could injure unprotected hands is found on a ferrule, the bottom edge of a latch or cover skirt, or on the top or bottom edges of the body, the sample unit shall be classified as defective.				

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QUALITY CONFORMANCE INSPECTION
CLASSIFICATION OF CHARACTERISTICS

PARAGRAPH	TITLE	SHEET 2 OF 2		DRAWING NUMBER 12564414
4.4.2.3	Container Assembly			NEXT HIGHER ASSEMBLY 12564414
CLASSIFICATION	EXAMINATION OR TEST	CONFORMAN CE CRITERIA	REQUIREME NT PARAGRAPH	INSPECTION METHOD REFERENCE
<u>Minor</u>				
201.	Outside height, max.	LEVEL II	3.2	Gage
202.	Outside length, max,	LEVEL II	3.2	Gage
203.	Outside width, max.	LEVEL II	3.2	Gage
204.	Marking incorrect, incomplete, illegible or missing	LEVEL II	3.2	Visual
205.	Foreign matter, except corrosion	LEVEL II	3.2	Visual
206.	Evidence of poor workmanship	LEVEL II	3.12	Visual

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NOTES:

3/ Failure of two (2) or more units of the sample to comply with the specified performance requirements shall be cause for rejection of the lot. If one unit fails to comply with the requirements, a second sample consisting of the same number as specified for the first sample shall be tested. If in the accumulated samples, two (2) or more units fail to comply with the requirements, the lot shall be rejected.

4/ Failure of four or more units of the sample to comply with the requirement shall be cause for rejection of the lot. If two (2) or three (3) units of the sample fail to comply with the requirements, a second sample consisting of the same number of units as specified for the first sample shall be tested. If in the accumulated samples, five (5) or more units fail to comply with the requirement, the lot shall be rejected.

5/ Three (3) standard panels per TT-C-490.

6/ Failure of the phosphate coating on the standard panels to comply with the applicable requirements for appearance and minimum weight, shall be cause for rejection of all container subassemblies phosphated since the preceding test.

7/ Failure of any unit of sample to comply with the requirements for paint adhesion shall be cause for rejection of the lot.

8/ Failure of any unit of the sample to comply with the requirements for corrosion resistance shall be cause for rejection of the lot.

9/ A variable inspection plan from MIL-STD-414, Table B-3 with an AQL of 1.50 percent, shall be used to determine lot acceptability, applying the method of calculation as shown in Example B-3. Failure of the sample to meet the acceptability criterion shall be cause for lot rejection.

10/ Failure of any unit of the sample to comply with the specified requirements for weld security of hasp assemblies, latch requirements or handle assemblies shall be cause for rejection of the lot.

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4.4.3 Packaging packing and marking inspection. There are no packaging or packing requirements applicable to this item.

4.4.4 Inspection equipment. The inspection equipment required to perform the inspections specified herein is identified in the "Inspection Method" column of the Classification of Characteristics listings in Table I and 4.4.2.1 thru 4.4.2.3. Contractor inspection equipment designs shall be submitted for Government approval as specified in the contract. Designs which provide variable measurements instead of attributes data are preferred in order to facilitate the use of statistical process control. See MIL-A-48078 and 6.3 herein.

4.5 Methods and inspection.

4.5.1 Elevated temperature storage. The container shall meet the requirements of 4.5.2 prior to testing. Environmentally condition the container as specified in 3.3.1. After conditioning reinspect the container in accordance with 4.5.2 for compliance to the requirements of 3.4.

4.5.2 Performance. The container shall be inspected to assure compliance with the requirements of 3.4 through the following procedures:

- a. Unlock and lock the cover assembly hardware by hand leverage. Note the locking and unlocking action for effectiveness and ease of operation.
- b. Remove and replace the cover assembly. Note any misfit or binding with the body assembly.
- c. Remove all cover assemblies. Inspect the gasket for fit, security, cuts and splits.
- d. Note any sticking of gaskets to the top edges of the body assemblies.

4.5.3 Airtightness. The container shall be conditioned to a minimum temperature of 50°F and ambient pressure prior to testing. The containers shall be tested in accordance with 4.5.3.1 or with permission of the procurement agency with 4.5.3.2, to the requirements of 3.5. A wetting agent may be used to minimize air bubbles clinging to the exterior surface.

4.5.3.1 Vacuum method. The container shall be tested for leakage by immersing the closed container in the inverted position under water in a vacuum vessel and lowering the pressure in the vessel to three pounds per square inch minimum below ambient pressure. Observation for leakage of air from the container interior shall be made for a minimum of 30 seconds after reduction of pressure. A stream or recurring succession of bubbles shall constitute leakage.

4.5.3.2 Hot water method. The container shall be tested for leakage by immersing the closed container, in the inverted position, to a depth of one inch below the surface of

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the water. The temperature of the water and the length of time of immersion shall be that which will assure an increase in pressure to a minimum of 3 psi above ambient pressure. Observation for air leakage from the container interior shall be made during the period of pressure build-up and for 30 seconds after the 3 psi pressure differential has been reached.

4.5.4 Pretreatment. The method of test shall be as specified in TT-C-490, as applicable to the type of phosphate used. The prescribed panels shall be processed with cover or body assemblies to be represented, beginning with the start of daily production and at 4 hour intervals, maximum, thereafter. Appearance and weight of the phosphate coating on the panels shall be recorded against the batch of cover or body assemblies represented.

4.5.5 Paint.

4.5.5.1 Paint thickness. The method of test shall be as specified in TT-C-490. For boxes coated with powder coating only, the hasp (12564424) shall also be removed from the container body assembly, and the coating thickness on the exposed surfaces inside the pinhole shall be tested in accordance with IAW TT-C-490.

4.5.5.2 Paint adhesion. The method of test shall be as specified in TT-C-490. The test shall be performed on three (3) randomly selected surfaces of each unit of the sample.

4.5.6 Corrosion resistance. The method of test shall be as specified in ASTM B117 - Standard Practice for Operating Salt Spray (FOG) Apparatus. Using a sharp instrument (machinist scribe or equivalent), the painted specimens shall be scribed in a vertical direction approximately 6 to 7 inches long on the flat portion of each side, the bottom, the hinge end, and the cover. The sample shall be positioned so that the hinged edge of the assembled box is elevated approximately 15 degrees from the horizontal and rests upon a wooden support while the cover face is parallel to the principal direction of horizontal flow of fog through the chamber. Traces of paint blistering or corrosion spots on component edges or sharp corners shall not be classed as protective coating failure. After salt spray testing, the scribe shall be evaluated according to ASTM D1654, Procedure A, Methods 1 or 2.

4.5.7 Gasket compression. The container assembly shall be tested to determine compliance with the requirement of 3.8. Three point contact of the container assembly resting on blocks may be used to overcome any rocking motion which might be encountered with the assembly resting on the surface plate. However, since the measurement technique relies upon relative distances, care should be taken to assure that there is no displacement on the referenced surfaces between the readings.

4.5.8 Weld security. The body assembly and cover assembly shall be tested to determine the requirements of 3.9.

4.5.8.1 Hasp. The body assembly resting on its bottom shall be clamped in a suitable device. The specified tensional force shall be slowly applied perpendicular to the

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bottom and against the underside of the offset of the hasp. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. After removal of the force, examine the hasp for distortion and weld failure.

4.5.8.2 Handle. With body assembly resting on its bottom or on end, attach a suitable device to each end handle. With one held, apply the specified tensional force through the other parallel to the container bottom against the ferrule of each handle. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. After removal of the force, examine the handle and hasp for distortion and weld failure.

4.5.8.3 Latch assembly. Attach a suitable device to each latch on the cover assembly. Secure one and slowly apply a tensional force to the other parallel to the face of the cover. The force shall be applied at a rate of .125 to .25 inch per minute and held for one minute. Apply the force against the surface of the latch links exposed on the underside of each latch. After removal of the force, examine the latches, latch links, latch link retainers and cover for distortion and weld failure.

4.5.9 Flatness. The cover and body assemblies shall be inspected to determine compliance with the requirements of 3.10.

4.5.9.1 Cover assembly. The flatness shall be measured on the cover assembly along the length of the cover in the area specified on Dwg. 12564416 and the entire width adjacent to the latch link retainer on the flat surface of the cover.

4.5.9.2 Body assembly. The flatness shall be measured on the body assembly along the length and width of the entire top edge as specified on Dwg. 12564415.

5. PACKAGING

5.1 Preservation, packaging, packing, and marking. Preservation, packaging, packing, marking and unitization shall conform to standard commercial practices, and meet common carrier acceptance and provide safe delivery to destination at lowest rates.

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 containers described herein are to be used for holding 40mm ammunition during usage, shipping and storage.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this specification
- b. Place of inspection, if not at manufacturer.

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- c. Issue of DODISS to be cited in the solicitation, and, if required, the specific issue of individual documents referenced (see 2.1.1).
- d. Requirements for submission of first article sample.
- e. Provisions for the submission and approval of the welding procedure.

6.3 Submission of contractor inspection equipment designs for approval. Submit copies of designs are required to: Commander, U.S. Army ARDEC, Attn: SMCAR-QAF-S, Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contract Data Requirements List, DD Form 1423 in the contract.

6.4 Drawings. Drawings listed in Section 2 of this specification under the heading U.S. Army Armament, Research, Development and Engineering Center (ARDEC) may also include drawings prepared by, and identified as U.S. Army Armament, Research and Development command (ARRADCOM), Frankford Arsenal, Rock Island Arsenal or Picatinny Arsenal drawings. Technical data originally prepared by these activities is now under cognizance of ARDEC.

6.5 Intermediate point inspection. The classification of defects identifies the defect characteristics (among other things) for acceptance inspection. It may be necessary to modify the sequence of inspection stations to best suit the manufacturing process. Inspection for characteristics which will be hidden or altered by sequent processing operations (including unrelated operations) should be scheduled to prevent premature acceptance or rejection, which could be detrimental to the attainment of optimum product quality in the end item. Inspection stations that are different than those contained in this specification shall be submitted to the Government for evaluation/ approval.

6.6 Submission of alternative quality conformance provisions. All contract or proposed alternative quality conformance provisions shall be submitted to the Government for evaluation/ approval as directed by the contracting activity.

6.7 Subject term (key word) listing.

Cover assembly
Body assembly
Hasp and latch
Gasket compression
Pretreatment
Phosphate
Paint

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.

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Custodian:
Army-AR

Preparing Activity
Army-AR

(Project 8140-2011-004)

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>.