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MILITARY SPECIFICATION

CONTAINER, STEEL, FOR BULK PROPELLANT

This specification is approved for use by the U.S. Army Armament Munitions and Chemical Command, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers one type of steel container used for shipping and storage of bulk propellant.

2. APPLICABLE

2.1 Government documents.

2.1.1 Specification and standards. Unless otherwise specified (see 6.1), the following specification and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

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

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-1261 - Welding Procedures for Constructional Steel

FSC 8140

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to Commander, US Army Armament Research and Development Center, Attn DRSMC-QA, Dover, New Jersey 07801 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter

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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.

DRAWINGS

U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER

9345265 - Container, Steel

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

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or requested for proposal shall apply.

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ASTM-D412 - Rubber Properties in Tension, Standard Test Method for
ASTM-D3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

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

3.2 Containers. The containers shall comply with all requirements specified on dwg. 9345265 and associated drawings and with all requirements specified in applicable specifications and standards.

3.3 Welding. The welding shall comply with the requirements of MIL-W-12332 or MIL-STD-1261.

3.3.1 Tensile strength of body material. The tensile strength of the body material shall not be less than 45,000 pounds per square inch (psi) nor greater than 51,000 psi when tested as specified in 4.5.1.

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3.3.2 Tensile strength of weld. The tensile strength of the longitudinal body weld shall not be less than 65 percent of the tensile strength of the body material when tested as specified in 4.5.1.

3.4 First Article Inspection. This specification contains technical provisions for first article inspection. Requirements for the submission of first article samples by the contractor shall be as specified in the contract.

3.5 Workmanship.

3.5.1 Parts. All parts shall be free of chips, dirt, grease, rust and foreign material. The cleaning method used shall not be injurious to any of the parts nor shall any of the parts be contaminated by the cleaning agents used.

3.5.2 Containers. The container shall be regular, smooth, and free from wrinkles, pin holes, cracks, rough spots, burrs, sharp edges and any other defect that might affect the serviceability, durability, safety and appearance of the container.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection and standard quality assurance provisions. Unless otherwise specified herein or in the contract, the provisions of MIL-A-48078 shall apply and are hereby made a part of this detail specification.

4.2 Classification of inspections. The following type of inspection shall be conducted on this item:

a. First Article Inspection
b. Quality Conformance Inspection

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 ten (10) containers and five (5) gaskets.

4.3.2 Inspection to be performed. See MIL-A-48078 and Table I specified herein.

4.3.3 Rejection. See MIL-A-48078.

TABLE I. First article inspection

CLASSIFICATION OF DEFECTS & TESTS

MIL-C-70469 (AR)

PARAGRAPH	TITLE				DRAWING NUMBER
	Container, Steel and Gasket		SHEET 1 OF 1		9345265
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
	Examination for defects (see note)	10		3.2	4.4.2.1
	Tensile strength	2		3.2	4.5.1
	Drop test	3		3.2	4.5.2
	Leak test	3		3.2	4.5.3
	Tensile load on gasket	5			4.5.4

NOTE: The examination for defects shall be performed on the containers prior to performance of the other container tests.

DPSMC-OA (D) Form 160, 1 Aug 83 replaces edition of 1 Jul 77 which may be used until exhausted

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4.4 Quality conformance inspection.

4.4.1 Inspection lot formation. Inspection lots shall comply with the lot formation provisions of MIL-A-48078. In addition, inspection lots of containers shall contain material from lots with the same interfix number from one manufacturer.

4.4.2 Examination - See MIL-A-48078. Unless otherwise specified in the Classification of Defects and Test Tables, sampling plans and procedures for major and minor defects shall be in accordance with MIL-STD-105, Inspection Level II.

QUALITY CONFORMANCE INSPECTION

CLASSIFICATION OF DEFECTS & TESTS

MIL-C-70469 (AR)

PARAGRAPH	TITLE				DRAWING NUMBER
4.4.2.1	Container, Steel		SHEET 1 OF 1		9345265
					NEXT HIGHER ASSEMBLY
CATEGORY	EXAMINATION OR TEST	NO OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	PARAGRAPH REFERENCE /INSPECTION METHOD
Critical	None defined				
Major					
101	Inside length of body		0.40%	3.2	Gage
102	Length of container (body and cover)		0.40%	3.2	Gage
103	Inside diameter of body		0.40%	3.2	Gage
104	Convexity of cover with respect to top surface, minimum (min.)		0.40%	3.2	Gage
105	Convexity of bottom surface with respect to base of rim, min.		0.40%	3.2	Gage
106	Gasket not secure to cover		0.65%	3.2	Visual-Manual
107	Component assembled improperly		0.65%	3.2	Visual
108	Component missing or damaged		0.65%	3.2	Visual
109	Closure latch not properly engaged		0.65%	3.2	Visual
110	Protective finish on cover, body or bottom incomplete or missing		0.65%		
Minor					
201	Evidence of poor workmanship		1.0%	3.5	Visual

NOTES:

DRSMC-QA (D) Form 160, 1 Aug 83 replaces edition of 1 Jul 77 which may be used until exhausted.

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4.4.3 Testing.

4 4.3.1 Tensile strength (see 3.3.1 and 3.3.2), Major defect. Six (6) bodies shall be randomly selected for this test. From each body, three (3) specimens shall be selected at random for determination of body material tensile strength. Also, from each body, four (4) specimens approximately equally spaced along the axis shall be taken at right angles to the weld and the tensile strength of their welds shall be determined. Each of these values shall be compared with the lowest determined value of the body material tensile strength for compliance with the requirement of 3.3.2. If one or more specimens (longitudinal body weld or body material) fail to comply with 3.3.1 or 3.3.2, that sample body shall be classed defective. If two or more sample bodies are classed defective, the lot shall be rejected.

4.4.3.2 Drop test (see dwg. 9345265), Major defect. Four (4) containers shall be randomly selected for this test. If one or more containers fail to meet the requirement, the lot shall be rejected. The test shall be performed in accordance with 4.5.2.

4.4.3.3 Leakage test (see dwg. 9345265), Major defect. The containers shall be tested one hundred percent. Any container which fails the applicable requirement, shall be classed defective and removed from the lot. The test shall be performed in accordance with 4.5.3.

4.4.3.4 Tensile load on gasket joint (see dwg. 9345265), Major defect. Five (5) gaskets shall be randomly selected from each lot for this test. If any gasket fails to meet the requirement, the lot shall be rejected. The test shall be performed in accordance with 4.5.4.

4.4.4 Inspection equipment. The inspection equipment required to perform the examinations and tests prescribed herein is described in the 'Paragraph Reference/Inspection Method' column in the tables starting with paragraph 4.4.2.1 and in 4.5. The contractor shall submit for approval, inspection equipment designs in accordance with the terms of the contract. See Section 6 of MIL-A-48078 and 6.2 herein.

4.5 Methods of inspection (see 6.3).

4.5.1 Tensile strength. The tensile strength shall be determined in accordance with ASTM-E8.

4.5.2 Drop test. The drop test shall be performed in accordance with dwg. 9345265.

4.5.3 Leak test. The leak test shall be performed in accordance with dwg. 9345265.

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4.5.4 Tensile load on gasket joint. The test shall be performed in accordance with ASTM-D412.

5. PACKAGING

5.1 Packaging requirements. None required.

5.2 Packing and marking shall be in accordance with ASTM-D3951-82.

6. NOTES

6.1 Ordering data. See MIL-A-48078.

6.2 Submission of inspection equipment for design approval See MIL-A-48078. Submit designs as required to: Commander, US Army Armament Research and Development Center, ATTN: DRSMC-QAR-I, Dover, New Jersey 07801.

6.3 Prior approval of the Contracting Officer is required for use of equivalent test methods. A description of the proposed method should be submitted through the Contracting Officer to: Commander, US Army Armament Research and Development Center, ATTN: DRSMC-QAR-Q, Dover, New Jersey 07801. This description should include but not be limited to the accuracy and precision of the method, test data demonstrating the accuracy and precision and drawings of any special equipment required.

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Preparing Activity:
Army-AR

Project No. 8140-A634

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3a. NAME OF SUBMITTING ORGANIZATION

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- ☐ VENDOR
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5. PROBLEM AREAS

a. Paragraph Number and Wording

b. Recommended Wording

c. Reason/Rationale for Recommendation

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional

b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional

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