

MIL-C-12779C
10 January 1969
SUPERSEDING
MIL-C-0012779B(MU)
14 October 1963, and
MIL-C-12779A
12 October 1956

MILITARY SPECIFICATION

CARTRIDGE, BLANK, LINE THROWING, CALIBER .45, M32

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

1. SCOPE

1.1 This specification covers a Cartridge for use in Caliber .45 Line Throwing Guns.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

STANDARDS

Federal

Federal Test Method Standard No. 151 - Metals; Test Methods

Military

MIL-STD-105	- Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-109	- Quality Assurance Terms and Definitions
MIL-STD-636	- Visual Inspection Standards for Small Arms Ammunition through Caliber .50
MIL-STD-1167	- Ammunition Data Card

DRAWINGS

US Army Munitions Command

C7553068	- Cartridge, Caliber .45, Blank, Line Throwing, M32
F10542548	- Packing and Marking, Cartridges, Blank, Line Throwing, Caliber .45, M32, Cartons, Box Ammunition M2A1, Box, Wirebound

FSC 1305

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2.1 DRAWINGS (Cont'd)

U.S. Army Munitions Command

- | | |
|--------------|--|
| B7553068A | - Cartridge, Caliber .45, Blank, Line Throwing, M32 (Steel Case) |
| IEL-7553068 | - Inspection Equipment List for Cartridge, Cal. .45, Blank, Line Throwing, M32 |
| IEL-7553068A | - Inspection Equipment List for Cartridge, Caliber .45, Blank, Line Throwing, M32 (Steel Case) |

PUBLICATIONS

AMCR 715-505, Volume 5 - Ammunition Ballistic Acceptance Test Methods, Volume 5, Test Procedures for Cal. .45 Cartridges

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

3. REQUIREMENTS

3.1 General.- The cartridge shall comply with the requirements specified on Drawing C7553068 or B7553068A as applicable and as specified herein. (See 6.1.2)

3.2 Waterproof test.- Sample cartridges, after submersion under one inch head of water for 24 hours, shall be conditioned at $70^{\circ} + 2^{\circ}$ Fahrenheit (F) and fired at a 30° angle for range with the line-carrying rod with line attached. The minimum acceptable range is 75 yards from the muzzle of the weapon.

3.3 Primer sensitivity.- The energy imparted by a steel ball $1.94 + .02$ ounces falling 18 inches shall cause initiation of the primer. The energy imparted by a steel ball $1.94 + .02$ ounces falling 3 inches shall not cause initiation of the primer.

3.4 Residual stress.- The brass cartridge cases shall not split when subjected to one percent (%) mercurous nitrate solution for 15 minutes.

3.5 Velocity.- The velocity of the rod with line attached, when imparted by the cartridge and conditioned at $70^{\circ} + 2^{\circ}$ F. shall not exceed 227 feet per second (fps) at 6 feet from the muzzle of the weapon.

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3.6 Chamber pressure.- The average chamber pressure of the sample cartridges, conditioned at $70^{\circ} \pm 2^{\circ}\text{F}$, shall not exceed 20,000 pounds per square inch (psi).

3.7 Range.- The sample cartridges conditioned at $70^{\circ} \pm 2^{\circ}\text{F}$, shall project the line carrying rod with its trailing line a minimum of 75 yards from the muzzle of the weapon when fired at an angular elevation of 30 degrees.

3.8 Temperature.- The cartridge shall comply with the requirements of 3.5, 3.6 and 3.7 when conditioned at 0°F . for 24 hours and fired at that temperature, and when conditioned at 120°F , for 24 hours and fired at that temperature.

3.9 Salt spray (steel case cartridges).- No steel case shall show any corrosion products after the cartridge has been subjected to a five percent salt spray for five hours.

3.10 Function and casualty.- The sample cartridges shall function without casualty when tested for compliance with paragraphs 3.5, 3.6, 3.7 and 3.8.

3.11 Workmanship.- The requirements for workmanship are as specified on the applicable drawings, referenced specification and the following:

3.11.1 Metal defects.- The cartridge shall be free of folds, wrinkles, deep draw scratches, scratches, splits, scaly metal, dents and other defects.

3.11.2 Foreign matter.- The cartridge shall be free of corrosion, stains, discolorations, dirt, oil and smears of lacquer.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection.- Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 assure supplies and services conform to prescribed requirements.

4.1.1 Quality assurance terms and definitions.- Reference shall be made to MIL-STD-109 for definition of quality assurance terms.

4.2 First article sample.

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4.2.1 Initial production sample.- At the beginning of regular production, a sample shall be submitted in accordance with contract requirements and shall consist of 500 cartridges. The sample shall be manufactured using the same materials, equipment, processes and procedures as will be used in regular production. All parts and materials, including packaging and packing, shall be the same as used for regular production and shall be obtained from the same source of supply.

4.2.1.1 Examination and test.- After inspection and provisional acceptance at source, the sample shall be inspected for all requirements of the drawings and specifications at a Government laboratory or such other facility specified in the contract.

4.2.1.2 Initial production sample failure.- Failure of the sample to comply with requirements of the drawings and specifications shall result in sample disapproval.

4.3 Inspection provisions.

4.3.1 Lot.

4.3.1.1 Submission of product.- The product shall be submitted in accordance with MIL-STD-105.

4.3.1.2 Lot identification.- Each lot of ammunition shall be identified as to type, caliber and model, as well as with a lot number and the manufacturer's identification as assigned by the procuring agency. Each lot shall be further identified by a Federal Stock Number assigned by the procuring agency.

4.3.2 Examination.- One hundred percent examination shall be performed for all critical defects. Examination for major and minor defects shall be performed on a class basis in accordance with the classification of defects, Table I, using applicable sampling plans and acceptance criteria of MIL-STD-105. The acceptable quality level (AQL) for the major class shall be 0.25 percent and the AQL for the minor class shall be 1.50 percent.

4.3.2.1 Classification of defects.- The classification of defects shall be specified in Table I.

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4.3.2.1 (Cont'd)

TABLE I

No.	Defect and Method of Inspection	Critical	Major	Minor	Major or Minor
Visual <u>1/</u>					
Cartridge					
1	Discolored, dirty, oily, smeared			X	
2	Corroded or stained, if etched		X		
Case					
4	Round head			X	
5	Dent				X
6	Split case				
	Below top of wad <u>2/</u>		X		
	Between mouth and top of wad			X	
7	Perforated case				
	Below top of wad <u>2/</u>		X		
	Between mouth and top of wad			X	
8	Draw scratch				X
9	Scratch			X	
10	Beveled underside of head			X	
11	Scaly metal				X
12	No chamfer or head (rim)			X	
13	Wrinkle			X	
14	Bulge			X	
15	Illegible or missing head stamp			X	
16	Defective head			X	
26	No primer	X			
27	Cocked primer	X			
28	Inverted primer	X			
29	Loose primer		X		
30	Nicked or dented primer			X	
31	No waterproofing material (primer pocket joint)			X	
32	Fold			X	
33	Missing wad(s) <u>2/</u>		X		
34	Wad and joint between case and wad not completely covered by lacquer			X	
35	Opening between wad and case wall <u>2/</u>		X		
36	No crimp or insufficient crimp <u>3/</u>	X			
Gaging					
37	Cartridge profile failure		X		
38	Diameter of head (rim) max.		X		
39	Thickness of head (rim) max.		X		
40	Depth of primer		X		

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4.3.2.1 (Cont'd)

- 1/ Refer to MIL-STD-636 for visual standards for defects 1 through 31. While no photographs of blank line throwing cartridges are included in this Standard, the cartridge case defects illustrated in Cal. .45 Section can be used. In the event of conflict between Table I of this specification and MIL-STD-636, as to defect classification, the classification specified in Table I shall apply.
- 2/ If condition permits loss of propellant, the cartridge shall be classed as a critical defect.
- 3/ The crimp shall be considered to be missing or insufficient when the open mouth diameter of the cartridge case exceeds 0.385 inch.

4.3.3 Tests.— The tests listed in Table II shall be conducted in accordance with the methods and procedures specified in 4.4.

4.3.3.1 Test samples.— The quantities for the various tests shall be as specified in Table II. Only cartridges having met the visual and dimensional requirements shall be used in the ballistic tests and shall have been selected in such a manner that the sample is representative of the entire lot. The cartridges selected shall be thoroughly mixed before being divided into samples for the various tests.

TABLE II

Test	Number of Cartridges			Requirement Paragraph
	70° + 2°F	0° + 2°F	120° + 2°F	
Waterproof <u>1/</u>	20			3.2
Primer Sensitivity <u>2/</u>	--			3.3
Residual Stress (Mercurous Nitrate) <u>1/</u>	50			3.4
Velocity <u>3/</u> <u>6/</u>	20	20	20	3.5 & 3.8
Chamber Pressure <u>4/</u> <u>6/</u>				3.6 & 3.8
Range <u>3/</u>	20	20	20	3.7 & 3.8
Salt Spray (Steel only) <u>5/</u>	20			3.9
Function and Casualty <u>7/</u> Cal. .45 Line Throwing Gun, Mark 1, Model 1				3.10

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4.3.3.1 (Cont'd)

- 1/ Failure of two or more cartridges to comply with the applicable requirement shall be cause for rejection of the lot. If one cartridge fails in the first test, a second sample consisting of double the number of cartridges in the first sample may be tested. If any failing cartridges are found in the second sample, the lot shall be rejected.
- 2/ Prior to assembly into cartridges, a sample of primers from each primer lot shall be tested for sensitivity. The test sample shall consist of the number of primers required for performance of a complete run-down test wherein fifty primers are tested at each height. If the average critical height (\bar{H}) plus five standard deviations (5 sigma) exceeds 18 inches, or if the average critical height (\bar{H}) minus two standard deviations (2 sigma) is less than three inches, the lot of primers shall be rejected subject to performance of a second complete run-down test wherein one hundred primers are tested at each height. Failure of the second sample to comply with the above criteria shall be cause for rejection of the lot of primers.
- 3/ Failure of two or more cartridges to comply with the applicable requirement shall be cause for rejection of the lot. If one cartridge fails in the first test, a second sample, consisting of double the quantity of cartridges used in the first test for the temperature at which the failure occurred, may be tested. If any failing cartridges are found in the second sample, the lot shall be rejected.
- 4/ If in any sample the sum of the average pressure plus 2.36 times the standard deviation of pressure exceeds 20,000 psi or the pressure of any individual cartridge exceeds 20,000 psi, the lot shall be rejected subject to testing of a second sample consisting of double the quantity of cartridges used in the first test for the temperature or temperatures at which the failure occurred. Failure of the cartridges of the second sample to comply with criteria indicated above shall be cause for rejection of the lot.
- 5/ Failure of the cartridges to comply with the applicable requirement shall be cause for rejection of the lot subject to testing of a second sample consisting of double the quantity of cartridges in the first sample. Failure of the cartridges in the second sample to comply with the applicable requirement shall be cause for rejection of the lot.
- 6/ Velocity and pressure are obtained simultaneously.
- 7/ Observation for function and casualty defects shall be made during the firing of all ballistic tests. The lot shall be rejected if firing defects exceed the acceptance number in Table III.

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4.3.3.2 Firing defects.- Firing defects and acceptance numbers shall be as specified in Table III.

TABLE III

Defects	Acceptance Number
1. Misfire	1
2. Primer	
a. Escape of gas through primer cup	3
b. Blown primer or primer falls out of pocket on extraction	0
3. Case	
a. Splits, body or mouth	3
b. Splits, through head	0
c. Partial rupture	1
d. Complete rupture	0
4. Failure to extract	1

4.3.4 Packaging, packing and marking inspection.- During or immediately prior to the packaging operation, 100 percent examination of the cartridges shall be performed to ascertain that the cartridge type conforms to the drawing. Occurrence of another model blank cartridge or a dummy cartridge shall be classed as a major defect. Occurrence of any type other than those listed shall be classed as a critical defect. All nonconforming cartridges shall be rejected. Inspection for packaging, packing and marking shall be in accordance with established procedures for commercial ammunition to determine compliance with requirements of Section 5.

4.3.5 Inspection equipment.- The examination and tests shall be made using equipment listed on IEL-7553068 or IEL-7553068A, as applicable, except as provided in 4.3.

4.4 Test methods and procedures.

4.4.1 Waterproof.- The test shall be conducted in accordance with AMCR 715-505, Volume 5.

4.4.2 Primer sensitivity.- The test shall be conducted in accordance with AMCR 715-505, Volume 5.

4.4.3 Residual stress (Mercurous nitrate).- The test shall be conducted in accordance with AMCR 715-505 (Chapter 1).

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4.4.4 Velocity.- The tests shall be conducted in accordance with AMCR 715-505, Volume 5 and shall be conducted simultaneously with the chamber pressure tests, except that line shall be attached.

4.4.5 Chamber pressure.- The tests shall be conducted in accordance with AMCR 715-505, Volume 5, except that line shall be attached.

4.4.6 Range.- The test shall be conducted in accordance with AMCR 715-505, Volume 5.

4.4.7 Temperature.- The test shall be conducted in accordance with AMCR 715-505, Volume 5. The weapon in which these tests are fired shall be at room temperature.

4.4.8 Salt spray.- Steel case cartridges shall be subjected to the salt spray test conducted in accordance with Federal Test Method Standard No. 151, in a five percent solution, with the cartridges suspended mouth down for five hours.

4.4.9 Function and casualty.- The test shall be conducted simultaneously with the velocity and chamber pressure and range tests.

4.4.10 Defect penalty.- In any ballistic test in which the occurrence of a firing defect listed in Table III prevents the obtaining of a reliable result for the characteristic being tested, an additional shot shall be fired. That particular test shall not be penalized, but the acceptance or initial production sample shall be penalized for such defects in accordance with Table III. However, if a misfire occurs in the waterproof test and examination reveals that the cause of the failure was moisture in the primer or propellant, that cartridge shall be penalized as failing to comply with the range requirement and the recorded range of the additional shot shall be disregarded. If, however, the examination discloses that the failure was caused by other than submersion, the failure shall be penalized in accordance with Table III. In the latter event, the recorded range of the additional shot shall be included in determining compliance with range requirements.

5. PREPARATION FOR DELIVERY

5.1 Packing - Level A (Worldwide shipment).- The cartridges shall be packed in accordance with Drawing F10542548 or as required by the contract.

5.2 Marking and labeling.- Packing boxes shall be marked in accordance with the applicable drawings cited in 5.1.

5.3 Data cards.- Ammunition data cards shall be furnished. The requirements of MIL-STD-1167 shall apply.

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6. NOTES

6.1 Ordering data.- Invitation for bids and contracts or orders will specify the following:

6.1.1 Title, number and date of this specification.

6.1.2 Applicable cartridge drawing number (See 3.1).

6.1.3 Type and level of packing.

6.1.4 Provision for the supply, maintenance and disposition of mandatory ballistic test equipment for acceptance inspection purposes.

6.1.5 Provision for the submission of acceptance inspection reports containing final inspection results for each lot of ammunition presented to the Government.

6.1.6 Specific instructions for completion and distribution of data cards.

6.1.7 Requirement for contractor to provide and maintain an inspection system in accordance with MIL-I-45208, Inspection System Requirements.

6.1.8 Provisions for submission of cartridge component drawings and identification of the primer and propellant, as applicable.

Custodians:

Army - MU

Navy - OS Air Force - 70

Preparing activity:

Army - MU

Project No. 1305-0391

Review Activity:

Navy - OS

Air Force - 70

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 22-R255

INSTRUCTIONS: This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.

SPECIFICATION

ORGANIZATION

CITY AND STATE

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

 DIRECT GOVERNMENT CONTRACT SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

YES NO (If "yes", in what way?)

4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)

SUBMITTED BY (Printed or typed name and activity - Optional)

DATE

DD FORM 1426
1 JAN 66

REPLACES EDITION OF 1 OCT 64 WHICH MAY BE USED.